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LIEUTENANT-GENERAL GRANT.

BY THE EDITOR.

EMERSON has somewhere said that "History easily resolves itself into the biography of a few distinguished individuals." Craving his pardon, this is not true. History has a deeper meaning and a far wider scope: it is concerned with the actions and well-being of masses rather than men, and has to do with the governed—the essential element—rather than with the governors, who are but accidents of the times. But distinguished men play an important part in representing great truths and vital principles; and tower, it must be conceded, so far above their fellows, as first to catch and longest to hold the glance of the historical traveller.

> "——— Ever since the iron days of old,
> Arose, among the pigmies of their age,
> Minds of a massive and gigantic mould,
> Whom we must measure, as the Cretan Sage
> Measured the pyramids of ages past,
> By the far-reaching shadows which they cast."

Such men, whose noblest boast should be that they are the ministers of good to their fellow-men, spring forth at the call of a nation's emergency, to protect its independence, guide its energies, direct its mind, conduct its armies, and lead it forward in the great progress towards the highest civilization.

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They are not meteors, which shoot with lurid flame athwart the inky sky, to leave a greater darkness behind them; they rise like luminaries, with a dawning, a glowing morn, and the promise of a brilliant noon.

We have had in our own time and history some notable examples of such characters; and we now approach one among the most striking, a man who, unknown to his own countrymen but four years since,—poor in this world's gear, acquiring an honest livelihood by the labor of his own hands, self-reliant, but apparently unconscious of his gifts and powers,—is to-day at the head of our armies, the object of his country's ardent gratitude and fervent hopes, and the wonder of the world.

Such a man is worth a biography, or rather a history; but it should not be written yet. Books have been hastily compiled about him; the newspapers are full of suggestive stories of his boyhood and youth; minute scrutiny pries into his domestic retirement; the public is curious whether he drinks, and how much he smokes; the religious papers hope that he does not swear. Every one is anxious to see the very finest portrait of him, "with his best expression;" and to get a glimpse of the original is esteemed a great happiness, a decidedly new sensation.

History is taking advantage of this public *furore* to collect and arrange her documents for future impartial record; while, with apparent unconsciousness of the great public enthusiasm he has excited, the distinguished subject does not turn to catch the breath of popular applause, but works night and day, without pomp or noise, to carry out to completion the great work in which he has already done so much,—to fill, let us hope, the East with his renown, as he has the West.

We do not intend to present a biographical sketch of General Grant: the facts, dates, and statistics are patent, "known and read of all men." Our only purpose is to offer our readers a few necessary data, from which to deduce a summary of those qualities which entitle General Grant to the admiration of his countrymen, and give them unlimited confidence in his future actions.

Born of respectable parents, at Point Pleasant, Clermont county, Ohio, Grant was a clever, self-reliant, but by no means uncommon, Western lad, who was fortunate in procuring an appointment to the Military Academy, "the nursing-mother of heroes." He entered that institution in 1839, and while there was only noted for being a plain, good fellow, of great equanimity, contentment, amiability, and common sense. He sought no popularity with his fellow-students; but they all liked him; and it was there he received the sobriquet (every good fellow has a nickname at West Point) of Uncle Sam, from his initials. No one there thought he would ever be a general: indeed, his

quiet, retiring demeanor rather veiled than manifested the fine manly qualities which all believed him to possess.

Graduating in 1843, he was brevetted a second lieutenant in the Fourth Infantry, and during the Mexican War participated in every important battle except Buena Vista. In Mexico, his record is distinguished above his rank. At Chapultepec he called forth the eulogies of his regimental, brigade, and division commanders, and may well be proud of the notice of him in General Worth's report.

He resigned his commission in July, 1854, and set about the difficult task—difficult, as a general rule, to army officers who leave the service without independent means—of gaining a livelihood for himself and his family by hard work. It *was* hard work. He dealt in wood; he farmed a little; he turned his hand to many things, with no great success.

The war broke out: the echoing cannon of Sumter was Grant's summons to the field. First a colonel of volunteers; then, when several regiments came together, an acting brigadier, by reason of his superior West Point knowledge, he was soon after appointed a full brigadier; and with that rank he occupied Fort Henry and "moved upon the enemy's works" at Donelson. A great victory that, to a people anxious and fearful. Who will soon forget the enthusiasm it aroused? For this he was made major-general of volunteers, and at once given a more important command.

He fought the battle of Pittsburg Landing on the 6th and 7th of April, 1862. But here candor compels us to say that but for the immediate and timely appearance of General Buell's forces, and the very noble, able, and gallant conduct of that officer, the disaster of the first day might not have been retrieved. Grant had been overpowered. Grant, who has done so much and so brilliantly, will, we are sure, not refuse the chief glory of Shiloh to General Buell, who, we think, richly deserves it.

But all his former glories pale before the splendor of his Vicksburg campaign. The remarkable letter of President Lincoln is the noblest epitome. He says, "When you got below, and took Port Gibson, Grand Gulf, and vicinity, I thought you should go down the river and join General Banks, and when you turned northward, east of the Big Black, I feared it was a mistake. I have now to make a personal acknowledgment *that you were right and I was wrong.*"

We need dwell no longer upon the great actions which illustrate his career. We draw from them a few inferences which cannot be questioned. Premising to our readers that General Grant is an educated and practical soldier, let us look at his chief qualities.

Grant is a *brave* man; not only fearless in all necessary ex-

posure of his person in battle, but cool, calculating, and clearly administrative in danger. A splendid horseman, and of great physical endurance, perhaps he is seen to best advantage on the field of battle directing the movements.

He is a *true* man; true in his aims, and in his adherence to them; true in speech and in act. He has no tortuous policy, no subterranean movements. He does not parade his thoughts, indeed, but he does not mean one thing and say another. He has no talking gift, and he cultivates silence, which, if speech be human, the philosopher has declared to be divine. He is no boaster, no temporizer, no dreamer; he builds no Arcadian castles. He is simply a straightforward actor; between his thoughts, words, and deeds there is an exact accordance; and very often the thought and deed dispense with words,—always, when possible.

He is a man of *strong will* and great *mental endurance;* not disheartened by disaster; always ready to repair and retrieve it. Vicksburg in especial demonstrated this. Repulsed at the north, he tried the cut-off. When that would not do, he landed on the south. Threatened by the rebel armies gathering in his rear, he besieged the town. Repulsed in his attempts to storm the works, he pushed forward the siege; and at length Vicksburg fell, because Grant adhered to his purpose.

He is a *generous* man; ready to give full credit to his co-workers and subordinates. He scorns to receive praise which is their due, and tells of the invaluable aid and co-operation of Sherman, McPherson, and others, with no stinted eulogium. With such a general, men can work; for such a chief they will do all in their power.

He is an *unambitious* man. This needs a word of explanation. Ambitious men seek, as the great end of their labors, self-exaltation. Grant has thus far worked for the good of the country. Each battle has been fought without ulterior view. If God sends honest fame as the reward, he does not disdain it; but it must be a sequel, not an aim. Heaven preserve him long from this "last infirmity of noble minds"! It ruins all it touches. It has already paralyzed some of our best men.

In a concluding word, he is a strong, iron, living, busy, honest, capable, self-sustained commander, who will plan wisely, fight terribly, follow up his victories, and leave the rest to Providence,—in whom, after all, must be our trust. He has large andvaried talents. He has, what Guizot calls, "the genius of common sense," and with that the power and determination to "go ahead;" which we have lacked more than any thing else in this war. As to his personal appearance, we can only refer our readers to the fine engraving which appears as a vignette to this number, with the remark that it is as much like him as an engraving can be.

ON SALTPETRE.

No. II.

BY JAMES C. BOOTH,
(Melter and Refiner, U. S. Mint.)

Extraction of Nitrates.—Since the nitrates generated in natural or artificial nitre-beds are readily soluble in water, the first operation is their extraction by water, the leaching or lixiviation of nitrous earths, whereby the nitres are at once separated from the huge mass of insoluble and extraneous matter. It is by no means unimportant how this is effected. If a quantity of water be poured over a quantity of nitrous earth, drawn off, and replaced in a similar manner by successive quantities of water, all the nitrates will undoubtedly be extracted; but then what an enormous amount of water must be evaporated to reach them! It would certainly cost more than they are worth. The principle of effecting lixiviation economically is to pass the same portion of liquid through successive lots of the earth, beginning with one containing the least nitre, and finishing with one as yet unleached, and, therefore, full of nitre. In the older method, which is a good one, a series of vats or hoppers, with false perforated bottoms covered with straw or other porous material, are arranged in terraced tiers of three or four, and charged with the broken and coarsely pulverized nitrous earth. Water sufficient to cover the earth, being poured over the uppermost vat, and allowed to remain some hours for complete solution of the nitres, is then run into another fresh vat. A second charge of half as much water on the first vat is in like manner run through the same second vat. Although all the nitres present are dissolved, yet only one-half flow off, the other half being retained by the porosity of the mass of earth. That which flows out of the second vat will run about fifteen per cent. nitre, and is fit for evaporation. A third and fourth fresh waters, passed through the first and then through the second vat, become strong enough in the third vat for evaporation. Thus the first vat is exhausted, until only a fraction of one per cent. remains in the earth, which is then used for renewing a saltpetre-plantation. By the use of large hoppers the concentration is still more easily and economically effected, the liquor from one hopper being run into vats, and pumped up into the second vat, where it is distributed, becomes stronger, and is run off for evaporation.

Formation of Nitrate of Potassium.—Before evaporation, all the nitrates should be transformed into nitrate of potassium, because the peculiar characters of this salt, as distinguished

from its associates, enables us to obtain it by crystallization in a state of purity with greater facility. Even in the natural nitre-beds, as previously shown by analysis, there are nitrates of magnesium, and others, too valuable to be lost; while in some of the natural and in nearly all the artificial beds these nitrates greatly predominate over that of potassium. It is only in the rarer case where sufficient potash has been added to the nitre-bed, that the present step is unnecessary. The valuable alkaline metal potassium, in one or more of its combinations, is the agent of transformation, and is at present wholly derived, either directly or indirectly, from wood-ashes.

The salts in solution in the nitrous lyes are nitrates and chlorides, with a little sulphate of magnesium, calcium, potassium, sodium, and ammonium, and sometimes carbonate of ammonium and organic matter. To give some idea of possible proportions, the following analysis, by Thenard, of the residue from a Parisian crude lye, may serve our purpose:—

Nitrate and chloride of potassium	10
Nitrate of calcium and magnesium	70
Chloride of sodium	15
Chlorides of calcium and magnesium	5
	100

These proportions, however, vary even in the same locality, and much more in different localities. In consequence of such a variable composition, different proportions of potash-salts are employed, usually determined by trial and observation at the time of making the interchange of bases.

The simplest case is the employment of commercial pot- or pearlash (which are chiefly carbonate of potassium) dissolved in twice its weight of water, and its clear solution added to that of the crude lye as long as the carbonates of calcium and magnesium precipitate. Then the nitrates of these metals are wholly transformed into nitrate of potassium, which is drawn off from the precipitate and evaporated to crystallization. The crystals are crude saltpetre.

Where sulphate of potassium is used, the nitrate of magnesium in the lye is first converted into that of calcium by adding milk of lime, which precipitates magnesia. Then a sufficient quantity of sulphate of potassium is added to the lye, drawn off clear, until all the lime-salts are decomposed. The clear liquor, drawn off from the deposited sulphate of calcium, or plaster of Paris, is evaporated to crystallization as before, yielding a crude saltpetre.

Common wood-ash, containing both sulphate and carbonate of potassium, may be used in an ordinary lye-tub to effect the same purpose, by covering the false bottom with straw and a cloth to strain the liquid, and packing the tub with moistened

ashes. The crude lye, in determinate quantity, is then passed through the mass, and drawn off for evaporation and crystallization. The leached ash is then mixed with fresh nitrous earth, to recover the little nitre left in it.

Lastly, if chloride of potassium be employed, rather more than its weight of sulphate of soda must be added at the same time (equal atomic proportions), so that the chloride becomes effectively sulphate of potassium, and the treatment is the same as above given for this salt.

Of all the above methods, that with potash is the simplest and best: it is, nevertheless, desirable to know that other salts of potassium can be substituted for it in case of necessity. In fact, potash feldspar and green-sand, previously prepared, might, in extreme need, be used as sources of potassium.

Crude Crystallization.—The crude solution of nitrates, now changed more or less into nitrate of potassium, is concentrated by evaporation and ebullition in large kettles. At the commencement of the ebullition, a white scum of organic matters rises to the surface, and is removed. Next, the carbonates of calcium and magnesium, held in solution by carbonic acid, begin to deposit, and, being prevented from settling on the bottom to some extent, by suspending a dish towards the bottom of the liquid in which they collect, are removed. Lastly, common salt (chloride of sodium) begins to crystallize out during the evaporation, being about equally soluble in hot and cold water. When the common salt begins to crystallize abundantly, the solution is about ready for crystallizing nitre. The liquor is run off into crystallizers, to form an impure nitre; or, still better, it is run into large boilers for refining directly.

Refining.—The half-refined liquor of the preceding operation, or a crude nitre with half its weight of water, is evaporated in large copper boilers to the amount of several tons of saltpetre at a time, any scum being carefully skimmed off, and any deposit of common salt drawn up from the bottom. A quantity of gelatine in hot solution is then stirred in, and the scum again removed, until it ceases to form, and the liquor becomes clear. After some hours' repose, heat being maintained all the time, the clear liquid is carefully transferred to the crystallizer,—a broad and shallow pan, with its bottom sloping downwards to the centre, and this central line sloping towards one end. After cooling for some time, the liquid is constantly stirred and agitated, to disturb the crystallization, so that the nitre which separates as the liquid cools appears as a fine flour, but actually consists of very minute acicular crystals. As it forms, it is drawn up on the sloping bottom towards the sides of the pan, so that the more impure mother-liquor drains towards the depressed centre of the pan, and from thence collects at the lowest end.

The principles involved in the refining process are—1st, the tendency of gelatine to collect and hold together organic matters; 2d, the much greater solubility of nitre than the salts accompanying it in hot water, so that when crude saltpetre is dissolved, some common salt is left undissolved, and when the liquors evaporate, more of this salt separates from the nitre; 3d, the most important of all is the formation of minute fibrous crystals, so that nearly all the impure mother-liquor is excluded.

This last fact is worthy of special notice, because the principle it involves is employed in purifying other substances by crystallization; for example, Epsom salt, white sugar, &c. When a solution is to be crystallized, containing other substances than the one chiefly desired, and the process is allowed to go on slowly, beautiful and large crystals will be obtained; but they are impure, from enclosing some of the mother-liquor, and, therefore, some of the matters not desired. A large crystal is not always built up by the successive addition of exceedingly thin layers over the whole surface at a time; but, on the contrary, a skeleton of the crystal usually appears, the outer edges being first formed, and the interior afterwards filling up. From the projecting edges of the skeleton a crystalline plane shoots across before the interior is filled up solid, and thus encloses a portion of the mother-liquor with its impurities. We have often seen crystals of alum constructed in this manner; and a natural crystal of calcareous spar once came under our observation, which was fully one inch across its scalenohedral form, but the surface-walls were nowhere more than one-eighth inch thick, the interior being nearly full of liquid.

We have had the opportunity of observing a very large number of native gold crystals from California and elsewhere, and can affirm that the skeleton form predominates in them. Cavities in crystals are of frequent occurrence, and these often contain liquids, even in natural crystals; but in those artificially formed, content of mother-liquor is the rule.

By agitating the refining nitre-liquid, then, the crystals are so minute that they contain mother-liquor only adhering to the surface, and none in their interior. Washing removes the adherent impurity.

Washing.—There is an interesting general principle embraced in this process, which is worth a moment's consideration. Water, at a given temperature, will dissolve a certain quantity of a salt, and no more. The solution is said to be saturated; but it is only so in reference to that salt. For a certain quantity of another salt will still dissolve in that saturated solution, although not so much as in pure water. This doubly saturated solution will again take up a small quantity of a third salt, and so on. Thus, a saturated solution of saltpetre will dissolve common salt and other salts, but no more saltpetre. The snowy mass of salt-

petre crystals (saltpetre flour) is heaped upon a hopper-like vat, with perforated false bottom, and a saturated solution of pure saltpetre gradually poured over it. As the solution works its way downward through the mass, it dissolves the remaining traces of chlorides and other salts, and, after allowing some time for complete washing, is run off below by removing a plug from the vat. After it has drained off, the only remaining chlorides, &c. are mere traces in the solution, which is retained in the mass by capillary action. A quantity of pure water is then slowly poured over, and becomes a saturated solution of nitre as it descends, carrying off the remaining traces of chlorides. This last solution is employed as the first saturated solution of pure nitre on the next lot of saltpetre-snow to be washed.

Economic Treatment of Residues.—The nitrates are too valuable to permit loss, when avoidable, during the operations of extraction, crude crystallization, and refining; the residues are, therefore, carefully husbanded whenever they contain traces of saltpetre. Thus, after extracting nitrous earth, the residue is returned to the earth of the nitre-plantation, and is said to aid in the more rapid generation of nitre. In the crudest crystallization, the mother-liquors are separately crystallized, the foreign salts not thrown aside until every trace of nitre is extracted from them; the extract, containing nitre, being added to a subsequent saltpetre lye. In the better process of crystallization, or first steps of refining, the first skimmings, being poor in nitre, are usually added to nitrous earth, while the later ones are worked separately to extract all their nitre. In all the steps of the refining process the insoluble residues or crystals of foreign salts are either separately worked to further purify them, if poor in nitre, or are thrown back to a newly refining batch, if abounding in nitre. To dwell more minutely on the numerous details of these processes, as practised in different places, would needlessly lengthen our article.

Testing Saltpetre.—The extreme purity of this salt requisite for gunpowder demands that some means of testing it should be used, both accurate and easy of execution. As pure saltpetre consists of nitric residue and potassium, or of nitric acid and potassa (on the dualistic view), we have only to test the percentage of each of these. The question, which seems easy when thus stated, is by no means so; for although several excellent methods, and not difficult of execution, have been devised for determining nitric acid, we have very few ways of determining potassa with accuracy; and these, besides being too tedious, would become unreliable in the hands of the inexperienced chemist. For determining also the percentage of nitric acid derivable from a specimen of nitre, we would in general advise its execution only by a skilful chemist.

There is one process, however, which might be confided to the

mere practitioner after some experience, the alkalimetric method of Gay-Lussac, as improved by Abel and Bloxam. Its principle is, the change of a nitrated to a carbonated alkali, and determining the last by measures of a normal acid. It is performed by deflagrating a given weight of nitre with powdered rosin and dry common salt; after cooling, heating with a little chlorate of potassium, extracting with water, and testing the solution by dilute sulphuric acid of a known standard, from a graduated alkalimeter. The number of measures used determines the percentage of carbonated (or caustic) alkali resulting from the nitrate. If the base was potassa or soda, the percentage of either nitrate is easily calculated (or read from a table) by the ratio between the atomic weights of the carbonated (or caustic) and nitrated alkali. Where the two nitrates are mixed, the process fails in determining their relative amounts; for it actually determines only the nitric acid from its equivalent quantity of sulphuric.*

Another method designed to determine the percentage of nitric acid with accuracy is the following modification of Gossart's process by Pelouze. Pelouze dissolves two grammes of pure iron wire in pure chlorhydric acid (eighty to one hundred grammes) in a small flask (one hundred and fifty cubic centimetres) with a glass tube in a cork, narrowing the orifice. When solution is complete, one and two-tenth grammes of the nitre under examination is introduced, and boiled for some minutes (the cork and tube being inserted), until the colored liquid becomes clear. It is then poured into about a litre of water, and a standard solution of permanganate of potash gradually added until the liquid assumes a rosy tint. The principles of the process are, first that the iron is converted into protochloride of iron, then that the addition of nitre oxidizes more or less of this into perchloride, in proportion to the amount of nitric acid derivable from the nitre, and lastly that the quantity of permanganate employed determines how much protochloride was not converted into perchloride. By subtraction, we have the amount that was so converted, and, by calculation from the remainder, the percentage of nitric acid in the nitre. The process is rapid, and often exact; but being sometimes liable to error, which may easily escape the notice of the operator, it should be rejected.†

Throwing aside the above methods, as not being sufficiently simple for common use, many processes have resulted from sheer practice, which are approximately reliable for crude commercial determinations. The Swedish method of examining the

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* For fuller details of this process, see "Proceedings of the Chemical Society," vol. ix. p. 125.

† See a criticism on this process, by Abel and Bloxam, in Proceed. Chem. Soc. vol. ix. pp. 99–110.

melted nitre is the simplest, but demands much experience. The fractured surface of a melted cake, of an inch thickness, exhibits different appearances, according to the purity of the nitre. When pure, it is coarsely fibrous or striated, and very translucent. When it contains two and a half per cent. common salt, the centre is not striated; when about three per cent., the striæ are visible only on the edges. The method is manifestly crude, but rapid.

The method used in France is much superior to the last. It consists in pouring over a given quantity of dry and powdered crude nitre a solution of pure saltpetre saturated at the temperature of the testing-room. This solution merely dissolves out the foreign salts, and, after using several charges of it, agitating to bring it in contact with every part of the crude salt, and pouring off or through a filter carefully, the residue will be the pure saltpetre in the crude salt, and that in the solution clinging to it. To remove the latter, the filter and contents are spread upon a porous tile, and left a day to dry. Experience has taught that two per cent. deducted from the weight of the dried salt gives the quantity of pure nitre in the crude salt. We regard this as the best commercial test, although too inaccurate for the chemical analyst.

The only troublesome ingredient in refined saltpetre is common salt, chloride of sodium, which renders gunpowder hygroscopic, and is, therefore, injurious; and so watchful are Government officers of this point, that a small fraction of a per cent. may condemn a refined nitre. The best method of ascertaining the percentage of common salt is to determine that of its chlorine by the moist silver assay. This process will accurately determine the one one-hundredth of one per cent. in a gunpowder, or in saltpetre. We have repeatedly tested gunpowder in this way, and found from one one-hundredth to six one-hundredths of one per cent. in it.

A commercially good method of determining the value of crude nitre by nitrate of silver is employed in Calcutta. It is based on the fact that the chief impurity in the Indian saltpetre is chloride of sodium. By pouring into the solution of a given weight of nitre a solution of lunar caustic of uniform strength, and observing the appearance of the curdled precipitate of chloride of silver, experience determines about how much common salt, *i.e.* impurity, is in the nitre. The process might readily be employed alkalimetrically, and with far greater precision and certainty.

We have rather indicated than described some of the expedients and processes employed for determining the percentage of pure saltpetre in a crude nitre, and of the most injurious impurity in the refined salt. Very few of them can be intrusted to others than skilful chemists, and we commit the subject to

their consideration to invent reliable, easy, and rapid processes, which still remain to reward their perseverance and ingenuity. We need two processes, one to determine the percentage of nitric acid, the other that of potassa.

Theory of the Formation of Saltpetre.—By theory we do not mean a merely interesting explanation of the manner in which nitre is generated, but such an explanation, if it be possible, as will meet the growing wants of mankind in developing the ready production of this important compound. The discussion may seem tedious, but it is too important for us, for the needs of mankind and of the United States especially, to slur over the subject by confessing ignorance or impotence. An ample discussion alone will show the limits of our present and the prospects of our future knowledge.

Since saltpetre consists of nitric residue and potassium (or nitric acid and potassa), and since potassium exists in and can be obtained from the ashes of land-plants, and is, therefore, almost everywhere accessible and available, we have only to discuss the generation of nitric acid from its constituents, nitrogen, oxygen, and hydrogen. It is immaterial whether the nitric acid is free or combined with a metal, we can always change it or the nitrate into nitrate of potassium by means of wood-ashes. In this view, therefore, we speak of nitric acid, saltpetre, and the nitrates generally, as synonymous terms. When we remember that the demand for saltpetre has certainly existed for a thousand years, and with greater urgency for the few past centuries; when we know that many of the requisite conditions of its formation have been carefully observed and confirmed by experiment, and have been put in practice for a long time in saltpetre-plantations; and when we consider the strides which chemistry has made during the last half-century and more, almost in arithmetic progression for each decennial period; it would seem strange if we had not arrived at the true theory of the generation of nitric acid, and had even based technical improvements on combined practice and theory, enabling us to fabricate saltpetre at will, in any required quantity, and without loss of time. Yet it is an astonishing fact that a perfectly satisfactory theory remains to be developed, although some light has dawned upon us recently. We still depend upon the natural formations of saltpetre, or their close imitation in the plantations, aided in a very limited degree by observation of practice and its results. A glance at some of the processes we have detailed shows that we can, by wholly artificial combinations, make saltpetre in the course of two or more years. This tediousness is precisely the reason why no one has had the courage to undertake perhaps a life-long investigation, to develop the theory of and bring into successful practice the production of saltpetre rapidly, easily, and economically, especially with the possible prospect of not being able

to accomplish his object. However, the points of theory which have been thus far evolved, through the combined labors and thoughts of many chemists, gild our hopes that the time is not remote when the rapid and easy generation of nitric acid will form a branch of chemical manufactures.

If we keep in our eye the several nitrogenic processes described above, we can infer the chief conditions requisite in them to generate nitric acid. They are evidently, first, the presence of nitrogenous organic matter, whence the nitrogen is wholly or chiefly derived, to build up nitric acid; and yet such nitrogenous matter seems to be absent in a few instances; second, the presence of a suitable base (potassa, soda, lime, &c.) to catch and hold the acid, when produced, or possibly to induce its generation; third, the free access of air, all the objects of which are not certainly known, although sanctioned by practice, for we are not agreed whether it acts solely by oxidizing nitrogen or nitrogenous compounds into nitric acid, or by supplying the nitric compound it already contains; fourth, the presence of moisture, which also may act in several ways; and lastly, a summer temperature seems to be the best. Experience has concluded that too low or too high a temperature, and excess of water, diminish the product. These are the general conditions of the successful generation of nitrates, especially in nitre-beds; but they are manifestly no theory, no explanation of how nitric acid is produced.

Nitric Acid formed direct, by Heat or Electricity.—In the last century, Cavendish passed electric sparks for weeks through a mixture of two volumes of nitrogen and five volumes of oxygen in the presence of water and potash, and produced a little nitrate of potash. After that time it was inferred that the nitric acid detected in rain-water after a thunder-storm was due to the action of lightning. Berzelius observed that by burning a mixture of nitrogen and hydrogen in oxygen, nitric acid is produced; and Sir H. Davy obtained a like result by passing a powerful galvanic current through a mixture of oxygen, nitrogen, and aqueous vapor by means of a platinum wire heated to fusion. Böttger (Jahresb., 1858, p. 102) passed sparks from Rhumkorff's machine for fifteen to thirty minutes through a portion of dry enclosed atmospheric air, and observed the formation of yellowish vapors of peroxide of nitrogen, $N O_2$; and further states that when water was present at the same time, there was sufficient nitric acid formed to obtain crystals of saltpetre.

Nitric Acid direct, by Agency of Porous Bodies.—H. Davy and Longchamp long since theorized that the nitrogen and oxygen of the air, in the presence of moisture and the strong bases (lime, potash, &c.), might unite to form nitric acid in porous stones. Cloëz (Jahresb., 1855, p. 318) has recently confirmed the observation; for he found nitrate of potassium produced

after passing atmospheric air (free from ammonia) for six months over porous bodies moistened with carbonate of potassium, the porous bodies being chalk, marl, a mixture of kaolin and lime, and especially pumice and bricks. We should note the care taken by Cloëz to remove any possible ammonia from the air, by passing it successively through carbonated alkali, then through dilute sulphuric acid, and lastly over pumice moistened with oil of vitriol. He found considerable quantities of nitrate of potassium in pumice and bricks, traces in chalk, marl, kaolin and chalk, &c., and none in burnt bones and clay. In connection with these observations, let us bear in mind the cave of Memoora, in Ceylon, where no organic matter was observed, and similar grottos in France in the porous chalk-rocks, with mere traces of organic matter. To these let us add the recent observations of Schönbein, and also of Luca, that ozone, in the presence of strong bases, can oxidize the nitrogen of the air into nitric acid. Luca further found that nitric acid was only produced when the ozonized atmospheric air came from the neighborhood of a vigorous vegetation, although all the ammonia was previously removed from it. Luca thence concluded that the oxygen expired by plants was ozonized, and that ozone was still the cause of the oxidation of nitrogen to nitric acid.

The most recent experiments appear to prove that what has been taken for nitric acid by many observers is really nitrous acid, and that an infinitesimal quantity of nitrite of ammonium is an almost normal constituent of the air. It matters little, however, which acid it may be; for the nitrous is easily oxidized into nitric acid in the air.

We all know that the best observers may fall into error by neglecting some points of observation; and so it may be that all the above-noticed facts are not sufficiently well established to form a theory. But their accumulative evidence appears to us too strong to resist the conclusion that nitric acid may be generated by the union of its constituent elements, without the aid of organic matter. Of course, we embrace nitrous acid in the term nitric, and a metal (potassium, calcium, &c.) in place of the hydrogen of nitric acid.

Nitric Acid from the Oxidation of Ammonia.—Let us next inquire whether nitric acid is generated in any other way. A study of the natural and artificial sources of nitre shows conclusively that in nearly all cases organic matter, containing nitrogen, is present. Such matter, under the other conditions of heat and moisture, must of necessity enter into fermentation, the putrefactive, the mouldy, &c. It would seem to be its peculiar province to act as a cause of fermentative changes; and one universally observed result, as far as regards nitrogen, is the generation of ammonia, composed of nitrogen and hydrogen, according to the formula, $N H_3$. Since both these gases, during putrefac-

tion, are in the nascent state, a condition most favorable to chemical combination, the chemist can easily conceive of their coalescence into ammonia, wholly independent of experiment. But we have experience to warrant the conclusion. Thus, hydrogen nascent from moistened iron or zinc filings, in the presence of the air or of nitrogen, generates ammonia. Nitrogen nascent from nitric oxide, as when a mixture of the latter with hydrogen is passed over warmed or heated bodies (platinum sponge, pumice-stone, &c.), produces ammonia abundantly. Nitrogen and hydrogen simultaneously nascent from the decomposition of nitric acid and water by several metals, unite into ammonia. Its appearance, therefore, as a product of putrefaction, is in accordance with other facts.

Can putrefaction, then, through the medium of ammonia, generate nitric acid? A mixture of ammoniacal gas and oxygen explodes by the electric spark, yielding nitrogen, water, and nitrate of ammonia. A portion of the ammonia is oxidized, its hydrogen producing water, and its nitrogen nitric acid, which unites with some of the undecomposed gas. Kuhlmann proved that when ammonia and atmospheric air are passed over platinum sponge heated to 300° C. (572° F.), nitric and hyponitric acids are formed. Schönbein showed (Jahresb., 1856, p. 311) that platinum-black moistened with ammonia, and in contact with oxygen or air, generated nitrite of ammonium at common temperatures. According to Schönbein and Tuttle, oxidizing copper produces the same result. May we not here draw an inference as to the effect of porosity in inducing chemical action? Most important is the experimental observation of Collard de Martigny, that a closed flask containing milk of lime and ammoniacal atmospheric air, and often shaken during six weeks in summer, yielded nitrate of lime. This may serve as an illustration of the *modus operandi* of a saltpetre-plantation, performed with pure substances, apart from the heterogeneous mixtures of such a plantation. Lime is usually one of the most abundant bases in both natural and artificial nitre-beds: temperature and moisture generate ammonia from the organic matter of the bed, and the oxygen of the air has sufficient access. Nitrate of lime, *i.e.* nitric acid, is generated in the beds, and in Martigny's experiment. We think that we may leave this inquiry with the answer that nitric acid not only can be, but is, generated by the oxidation of ammonia.

Nitric Acid by direct formation of Nitrite of Ammonia.—As early, probably, as 1850, it would appear that G. C. Schaefer, of Center College, Kentucky, made a neat deduction, that since nitrous oxide, in assuming the elements of water, in presence of potash, generates nitrate of potash, *i.e.* nitric acid, and evolves ammonia, therefore, if nitrogen were in a similar way to assume those elements, nitrous acid and ammonia would result. Strip-

ping the idea of potash, as an unnecessary adjunct, the fact and its probable analogue may be thus paralleled by formula:—

$$N_2O + 2H_2O = NHO_3 + NH_3$$
$$N_2 + 2H_2O = NHO_2 + NH_3$$

Besides recalling Berzelius's remark on the production of nitric acid by burning a mixture of hydrogen and nitrogen in oxygen, we must recall the experiment of Th. Saussure, made long since, that by burning a mixture of nitrogen, oxygen, and excess of hydrogen, nitrate of ammonium is produced. Schönbein observed the production of an oxidized body in 1845, when burning carbohydrogens, fats, &c. in the air; and in later experiments (1861) he showed that nitrite of ammonium resulted from the slow combustion of phosphorus in moist air, whence he drew the inference that it was produced by the union of atmospheric nitrogen and water. He further asserted that all water descending from the air contained nitrite of ammonium, that the ammonia was generated by other means than the putrefaction of organic matter, and the nitrous acid in other ways than the union of nitrogen and oxygen by electricity. Further investigation led to an essay, in which he gave experimental evidence of the formation of nitrite of ammonium by air and water alone. The full essay will be found in "Annalen der Chemie," vol. cxxiv. pp. 1–13, and an abstract in English in the "Chemical News," vol. vi. p. 241. The general results are, first, that pure water, evaporated drop-wise or in small quantities at a time, with access of air, gave evidence of nitrite of ammonium in the condensed vapor; second, that the evaporation of weak potash solutions gave a similar result, nitrite of potassium being formed; third, that in the moderate combustion of charcoal, wood, or coal (free from sulphur), nitrite of ammonium can be obtained from the smoke; fourth, that in the combustion of bodies producing strong acids, *e.g.* sulphur, ammonia is observed, but not nitrous acid, because the latter is decomposed by the stronger acid. Others appear to have noticed some points in the above results; but to Schönbein must be accredited their clearer and fuller development, and a shrewd insight into their important bearing on nitrification. His opinion is that evaporation is the chief agent of nitrification, without denying that nitric acid is also formed by the oxidation of ammonia, arising from putrefaction.

The agricultural question of the supply of nitrogen to plants has enlarged our knowledge of the diffusion of nitric—or rather nitrous—acid, and, in addition, we have more accurate and more sensitive tests of its presence. All atmospheric precipitates, rain, snow, dew, &c., contain traces of nitric acid, according to observations made some years ago; and Liebig asserted that it was combined with ammonia. Boussingault (Jahresb., 1858, p. 103) found nitric acid in the water of ninety rains, and on Liebfrauen-

berg he found in ten million parts by weight of rain-water from three to twenty parts of nitric acid, and, after some storms, as high as sixty-two parts. In one storm, the first rain contained twenty-one parts, the second, accompanied with hail, gave two and a half parts, and the last rain yielded about two parts, in ten million. He further observed that snow contained more than rain, and that dew was not deficient in it. He further demonstrated the almost universal presence of nitric acid in soils, river and spring waters. Can this infinitesimal quantity be one main cause of the fertility which rain and other waters impart to the earth? The question, although interesting, is foreign to our purpose: much more to the point is the query, Is the minute quantity in the air, whether brought by rain or wind, the source, or one source, of the nitric acid found in natural and artificial nitre-beds?

How far the results of Schönbein may affect our former conclusion of the direct union of nitrogen and oxygen to nitrous or nitric acid, without reference to the simultaneous formation of ammonia, cannot yet be decided. A repetition of the experiments, with our improved methods of testing, and keeping his results in view, can alone resolve the question. Until then, we ought to regard our former conclusions as based on sufficient evidence, without denying his results.

Experiment and theory, then, point out three ways in which nitric acid may be generated: first, by direct union of oxygen and nitrogen by electricity or heat, or in the presence of strong bases, and especially by the aid of porous bodies; second, by the oxidation of ammonia, arising chiefly from putrefaction; and third, by evaporation and combustion, or rather by heat, air, and moisture. The last method acts in two ways, by generating nitrite of ammonia, both the nitrous and ammoniacal residues of which are subsequently oxidized into nitric acid.

There is one other point to which it may be necessary to allude, viz., the ease with which nitric acid may be resolved again into its lower oxides, or finally into its elements, as the question is of interest in understanding the theory of nitrification in the presence of organic matter. Hydrogen gas charged with nitric acid, and passed over warmed platinum sponge, ignites the latter, yielding water and ammonia. According to Kuhlmann, nascent hydrogen reduces the nitric acid of nitrates, forming ammonia: hence his conclusion that the action of putrefaction, apart from the air (which we know to be a reducing process), is to reduce nitrates to ammonia. The same result is asserted by Pelouze (Compt. Rend. xliv. 118), viz.:—that nitrates are gradually decomposed by putrefying organic bodies, yielding ammonia, and that, hence, little or no nitric acid is detected in manure-beds.

Theory of Nitre-beds.—We are now prepared to give an opinion on the *modus operandi* of a nitre-bed, whether natural

or artificial. Notwithstanding the opinion of Schönbein, that evaporation is the chief agent of nitrification, we think that the greatest mass of evidence favors the second mode of generating nitric acid, as the chief source of nitre,—to wit, the oxidation of ammonia evolved by putrefaction. In the artificial beds, we have the evidence of experience that the mixed organic and other matters must be exposed for a long time to a slow putrefaction until reduced to an earthy mould, in order to insure the greatest yield of nitre, and that during this period little or no nitric acid is generated. Now, as the mass is subjected to evaporating influences, nitric acid should form, according to Schönbein's view. It is true that nitrate or nitrite of ammonium may form, and be decomposed as rapidly as it is formed, by the remaining organic matter yielding ammonia and nitric acid, which last is itself resolved into ammonia. But we have no evidence that this is the case, and therefore conclude, from the known absence of any amount of nitric acid, that it is not formed, at least not in quantity, in the first stage of nitrification. The mould will, however, yield ammonia abundantly, if treated with alkali. It appears, then, that the first stage of nitrification consists in the generation of ammoniacal matter, which remains in the mould, probably in the form of a compound ammonia. We know that the process is attended with loss of ammonia which escapes; but, practice not having yet pointed out a remedy for the waste, the chemist will probably ere long find one in his agricultural researches.

The second stage is the nitrifying process, where the mould, mixed with old mortar, ashes, &c. (supplying the bases lime, potash, &c.), is exposed to the air, kept loose or porous, and continually moistened. As nitrification begins, no more water containing organic matter is added, it being found to diminish the yield of nitre. The chemical reason is doubtless that such putrefying organic matter would act reducingly on the nitric acid, and reform ammonia, as shown by Kuhlmann. The essential condition of the nitrifying heap is ammoniacal matter in the presence of strong bases, exposed to air and moisture This is simply the crucial experiment of Collard de Martigny, where pure ammonia, lime, air, and water generated nitrate of lime. Hence the theory of this part of the process is the oxidation of ammonia into nitric acid by the oxygen of the air, fostered and hastened, no doubt, by the inducing presence of strong bases. From the very nature of the heap, the oxidation of ammonia must be the principal source of nitre. To enter more minutely into the process, we endorse Kuhlmann's theory, that in the presence of carbonate of lime (or magnesia) a portion of ammonia is oxidized into nitric acid, and forms nitrate of ammonia with an adjoining unoxidized portion; that the nitrate is then decomposed by carbonate of lime into nitrate of lime and carbonate of ammonia, which last is again oxidized; and that

ammonia is therefore the generator of nitric acid and its transporter or carrier to the fixed bases. In this way he accounts for the presence of carbonate and other salts of ammonia in the crude liquors from lixiviating nitrous earth, the last portions of the carrier not being yet oxidized into nitric acid.

Admitting Schönbein's late observations, we have to add his theory of the generation of nitric acid in nitre-beds; for, although we may not with him believe it to be the principal one, we feel bound to admit its adjuvancy to increase the quantity of nitrates. Observing the results of sheer experience, we find that evaporation is an essential condition of nitrification. Now, although this evaporation has for one of its effects the capillary traction and accumulation of nitre towards the evaporating surface, admitting of its being there cropped for extraction, yet another effect must be the generation of nitrite of ammonium, and its final oxidation into nitric acid or a nitrate.

The best theory, then, of the working of natural and artificial nitre-beds, in the present state of our knowledge, appears to be, that the principal part of the nitric acid is generated by the oxidation of ammonia, resulting from organic putrefaction; that a portion is formed by the evaporation of water in the presence of air, whereby nitrogen, assuming the elements of water, produces nitrite of ammonium, which oxidizes into nitric acid; and that another portion is produced by the direct oxidation of nitrogen in the presence of bases and through the medium of porous bodies.

In all cases the nitric acid, when generated, and, in fact, at the time of its generation, unites with whatever strong bases it finds at hand, potassa, soda, lime, magnesia, ammonia, &c., forming nitrates of these bases. It appears probable that all three modes of generating nitric acid are progressing simultaneously in the bed.

It is clear, then, that we have made a little progress in understanding the mode in which nitrates are generated; but the details of the process, and the theory above given, make it just as clear that we have to make more progress in theory, and still more in practice, before saltpetre can be manufactured from its elements rapidly and economically. Nevertheless, it is surely now manifest that the hope we expressed, that it would yet make its appearance among ordinary chemical manufactures, can hardly be termed the mere enthusiastic speculation of a chemist.

Improvement of Nitrification.—We are now perhaps entitled to discuss possible improvements in the process from the principles enunciated. Since it appears most probable, if not quite certain, that the greater part of nitric acid is generated by the oxidation of ammonia, our attention will be first directed to the artificial nitre-beds. The first stage in these beds is the generation of ammonia; and a glance at the crude method by which

this operation is conducted, during a period of one or two years, shows that much ammonia must escape into the atmosphere, and be lost to nitrification, however much it may benefit vegetation. It is but within a few years that something promising to be really and tangibly useful has been ascertained in regard to the process of putrefaction; and for this we are chiefly indebted to the researches of Pasteur. He found recently that putrefaction is determined by the infusory genus Vibrio; that the Bacterias cannot exist without oxygen (the atmosphere) and the Vibrios cannot exist with it; that in some cases, where a pellicle is formed by the Bacterias on the surface of a putrefying liquid, thus preventing the access of oxygen to the interior, then two processes are progressing simultaneously in the liquid,—in the interior the Vibrios are transforming nitrogenous matter into more simple, but still complex, bodies, while on the exterior Bacterias burn up the matter by transforming it into water, carbonic acid, and ammonia. The views just promulgated by Pasteur are as yet too imperfect to admit of practical deductions for improving the nitrogenic process; but their further study ought to lead to methods of controlling putrefaction without loss of ammonia, and to give it such direction as to produce the ammoniacal bodies which will yield most nitric acid and most readily. Investigations in this direction may improve the first stage of the process. The second stage, or oxidation of ammonia, seems to us to be more in the power of the chemist, because we are better acquainted with the principles embraced in it than in putrefaction. From the nature of a nitre-bed, it seems most likely that a portion of the nitric acid formed on the windward side is reconverted into ammonia by matter further in the interior, incompletely putrefied. Experience has proved that no new organic matter should be added in this stage,—doubtless on account of this very reconversion; nevertheless it appears to take place, though to a less extent, so that the amount of nitrate escaping decomposition is the only resultant to the manufacturer. Hence the extreme slowness of nitrification. If a better method of oxidation could be devised, avoiding the regeneration of ammonia, as by increasing the extent of oxidizing surface, and diminishing the thickness of a bed,—by working under cover, in buildings, &c.,—it does seem as if the nitrogenic process could be shortened. We can, therefore, conceive how the ordinary process of nitrification might be greatly improved by shortening time and avoiding loss of material.

While thus giving mere hints that the ordinary tedious saltpetre process might be greatly improved, there is another course which we think preferable, viz.:—to abandon it altogether, and start afresh by the use of purer matters, not the multitudinous all-sorts of a nitre-bed, but to use those of known composition, to trace out their transformations during putrefaction by

analysis, to discover whether, where, and how nitrogen is lost, and to provide a remedy for the waste,—then to determine how the transformed matter is most readily converted into nitric acid, whether by oxidation or otherwise.

Again, if Schönbein's theory be correct, that nitrogen under the influence of moisture and heat will form nitrite of ammonia, then evaporation in moist air with a surface indefinitely extended ought to yield nitric acid abundantly, and our care would be to catch and hold it as it forms. The greatest extent of surface is most conveniently offered by porous bodies, and the strong bases are the best and cheapest means to hold the acid. Such a process would coalesce with the direct formation of nitric acid (the third method of generating it), if the latter be not indeed identical with it.

Lastly, we can easily conceive that it is not only possible, but quite feasible, to collect ammoniacal compounds in a crystalline state more or less pure, and by the aid of porous bodies, bases, and heat, to convert them by direct oxidation into nitrates in one day's time, instead of wasting several years in allowing meteoric agents to act at their pleasure. This is our idea of the manufacture of nitric acid. Besides the ammoniacal substances generated by putrefaction, we can produce and gather them from the products of distillation of nitrogenous organic matter. Much ammonia is produced when distilling bituminous coals for making illuminating gas, but, being an incidental product, inconvenient to detain, it is generally, in the United States, allowed to escape in so diluted a state as not to be worth recovery. To show the rapidity of operation when working with purer substances, recall Martigny's production of nitrate of lime in six weeks, and Kuhlmann's formation of nitric acid by porous platinum in part of a day.

Resources of the United States in Saltpetre.—At present we are acquainted with but few localities in the United States which yield or can be made to yield saltpetre, the nitre-caves of Kentucky and Tennessee being the principal; but the quantity they could supply would hardly equal a tithe of the demand, and we must look to other sources. We have entered more at length into the artificial generation of nitre to show that it is possible for us to produce saltpetre, and in quantity, too, even if commercially cut off from the rest of the world. But the process is too tedious for us as it is now practised, and its possible, or rather its probable, improvement is too clouded by the misty future, for us to rely upon it. The same may be said of Schönbein's idea of nitrification, that it is yet to be brooded over before it can become a fruitful nitrogenic process.

The only method left to us being to generate nitre from the salts of ammonia, what quantity of the latter can we rely upon? The large amount produced in distilling coals is now wasted,

thrown away, but might be saved if, in case of national emergency, patriotism would insert an apparatus after the hydraulic main, to catch the greater part of the ammonia, before washing it to death by Fairmount and Croton Water-Works. Surely the gain of ammonia would help to remunerate patriotism. There is another source. Our Western lands and Eastern together can produce more animal matter than our population can consume. The surplus may be distilled to yield ammoniacal matter in large quantity. In these sources of ammonia we have the means of generating nitric acid in quantities, we believe, commensurate with any probable demand, and with a rapidity better adapted to the habits of our people than the four-year crop of the nitre-bed.

We have omitted the mention of potassium in these considerations on our resources, for the reason previously given, that, as we produce a surplus of it for exportation in the form of pot- and pearlashes, we can always command enough to make nitrate of potassium, if we only have other nitrates.

To the above resources a possible future one may be added. The various surveys which our enterprising Government has executed across the continent have developed interior plains, where saline efflorescences abound, due to long seasons of drought after moisture. It is quite possible that still more expanded and minute explorations may develop localities where nitrates are generated, possibly the nitrate of potassium itself. The enervating winds that sweep over the plains of India are not so essential to their production: our dry inland breezes are quite hot enough to generate them over thousands of square miles.

While we have discussed the possibilities of obtaining saltpetre in case of our being severed from our fellow-nations by war, may we not add, in closing, what we conceive to be the best policy of our Government, offering as an apology our ignorance of what is or has been done? In view of the delays that would probably attend the artificial generation of saltpetre, even by the best and by improved methods, the safest position, clearly, is always to have a large stock of it on hand. In time of peace, the most prudent course would be to gather annually more true saltpetre from the valley of the Ganges than is demanded for consumption, and to store it away. We prefer the Indian, because it contains potassium, and would therefore free our potashes for other uses. While we have sufficient evidence that the plains of Hindostan can produce any amount required by war or commerce, yet it is not at all probable that a sudden demand for a very large amount could or would be answered. Since the accumulation of true saltpetre would require lapse of time, a large amount of nitrate of sodium might be more rapidly collected from the plains of Atacama, and kept in store, ready to be transformed into salt-

petre at a moment's warning, by our surplus potashes, or could be so changed previous to storage.

If the Eastern and Western coasts were cemented by iron bands, the extent of coast would seem to bid defiance to a complete blockade, even by several nations united: nevertheless, we would certainly feel less anxiety with a large stock of the elements of gunpowder on hand.

We do not recommend the manufacture of gunpowder by the Government, for one reason among others, that its danger imperatively demands the jealous watchfulness of self-interest; but we do deem a very large storage of two of its ingredients, saltpetre and sulphur, as the simplest suggestion of prudent forethought.

THE REGENERATION OF ITALY.

O glorioso spirto,
Dimmi; d'Italia tua morto è l'amore?
Di; quella fiamma che t'accese, è spenta?

LEOPARDI: *sul Monumento di Dante.*

WE still recall the thrill of wonder with which, four years ago, we hailed that miracle of modern history, the national struggle and triumph of Italy. The strife of a Western continent has so swallowed up our thoughts as to leave little room for the politics of Europe; yet even now it may be well for us, amidst these convulsions, to trace the causes of that movement, and, above all, to learn how a land surrendered for ages to civil discord has been awakened into social unity. We cannot believe that the same sun now rising on a happy Italy is to sink over the death-bed of this republic, and our hopes prove more short-lived than even the faded dream of a little Florence.

Nothing could seem, indeed, more like the romance of history than the events which within so brief a space have changed the destiny of that classic world. It has been the wont of our sentimentalists to complain that we are fallen on the iron age of prose; that, instead of the rich picture of a feudal past, of romantic gentlemen with iron pots on their heads rescuing sad damsels, gay ladies with hawk on wrist, venerable monks wearing hair shirts and chanting in dim religious light, a loyal peasantry in cottages most picturesquely grouped under the shadow of the castle, we have only the nobility of dollars, the drone of the factory-wheel, steam-engines, common schools, and unbelief. But the epic poetry of the world is not to-day to be sought in Ariostos or Spensers: it is sung in the life of the time. If we

look back but yesterday at the state of Europe, we find it resting in seeming peace after the tilt of the Crimea: Louis Napoleon silent on the throne; Austria ruling her Lombardo-Venetian kingdom; Tuscany, Modena, Parma, linked by family ties with her despotism; Bomba keeping unchanged the stupidity and cruelty of the Bourbon name in the South; and Pius serene in his Papal States, dreaming only of new dogmas of the Immaculate Conception. One ray of freedom glimmered from the little kingdom of Piedmont; and already Austria threatened to blot this anomaly from the map of Europe. An instant, and all was changed. Austria was driven back to her quadrangle; Piedmont became the great northern Power of Italy. But now followed the more miraculous act. State after state, bred in traditionary hate before the day of Dante, annexed itself peacefully to the kingdom of Victor Emanuel; and a whole people, without self-government, with hardly a precedent of union, crowned the victory of the field by a victory over its own passions, by an example of calm political wisdom that puts our America to shame. Then came another heroic episode. Garibaldi, the exile, the patriot, threw himself into Sicily; and while Europe looked on, expecting his death, in a few weeks the island was free; Naples followed, as if her own Vesuvius, after the seething of a century, had blazed forth in a new crater; the king fled; and the noble triumvirate, Victor the monarch, Cavour the statesman, and Garibaldi the hero, proclaimed a free, consolidated Italy.

There has been, indeed, since those events a pause in the march of affairs. Venetia and Rome still remain vexed problems. Yet, whatever the impatience with which we may look to the end, we are confident that the destiny of Italy is now secure. It is a marvel that makes the diplomacy of Europe dumb; but it gives us a deeper faith in God, and in the principles that lie beneath the surface of modern history. We do not rest our hope on the effort of a few patriots or the result of a brief campaign, but on the character of a nation tried and ripened through its ages of struggle.

This is the view, then, of modern Italy, which we especially wish to present. We have to combat one of the most chronic prejudices. It is not strange that so many, who see it in its long decay, who know little of its history beneath the surface, should look with grave doubts on the future. That history seems to recall only the saddest contrast:—

> "O patria mia, vedo le mura e gli archi,
> E le colonne e i simulacri e l'erme
> Terrii degli avi nostri;
> Ma la gloria non vedo,
> Non vedo il lamo e il ferro ond' eran carchi
> I nostri padri antichi."

"O country mine! I see the arches vast,
Walls, columns, statues of the stately Past;
Thro' lonely towers I tread;
But the old glory dead,
The laurel and the sword I see no more,
That once our fathers wore."

Rome, the palace of the Cæsars, and of the Middle Age; Florence, that keeps the stone of Dante and the memory of a republic; Venice, queen of the Adriatic, splendid and cruel as her ducal halls with their silent dungeons below; Milan, Genoa, Pisa, each a proud centre of art and letters:—and Italy since, her government a priesthood backed by Austrian bayonets, her social life like that of the two thousand Roman lazzaroni sunning themselves by day, and sleeping by night about the steps of the cathedral; the bazaar of knavish picture-dealers, of starved copyists, of ciceroni, who live on stout Englishmen coming to see St. Peter's with Murray and guineas; the café and opera-house of the world: this is the land of the dead, which Europe has long talked of with pity. We have repeated with sentimental scorn the old line of the "fatal dowry of beauty," and believed there was no hope for her. Forsyth saw there a picturesque ruin, like the Colosseum, "decayed, vacant, serious yet grand, half gray and half green." Goethe found "ceremonies and operas pass off from him like water from an oil-skin cloak," and cried, "Hide not from me the sun of higher art and pure humanity:" yet all he saw was the sunset from the Villa Madonna, or an antique Juno: he said nothing of the "pure humanity" starving in the Spielberg and struggling to awaken a fresh life in the national heart. And often in our Anglo-Saxon pride we have assumed to ourselves the only capacity of freedom, and looked down on this as a worn-out Latin stock, without social virtue, born for slavery and superstition. What can match the insolence of the English historian, who describes these Romans in the same well-known lines that the Roman poet wrote of Greece, as only workers in brass and marble, and gives to his own islanders their proud eulogy?—

"Tu regere imperio populos, Romane, memento;
Hæ tibi erunt artes."

It has been taken for granted that Italy must be preserved as a study of the antique for our artists; that the very dirt of Rome is part of the picturesque; that there can be no resurrection to social order and happiness. Is it true? is its epitaph to be, "vincitrice o vinta, sempre servir"? Is it only to remain the Campo Santo of buried ages? Are those green Apennines, smiling still over the valley of the Arno as when Dante walked there, to remind us only of the past? those eternal monuments of Rome to look down on the Campagna of an enslaved people? We believe far otherwise. And, if we study the future

of Italy with all the lights of past and present, we shall see there the real and long and at last successful struggle of a national life.

We shall not, of course, be able in a brief article to do more than touch such features of that history as illustrate its modern issues. But, to grasp the question clearly, we turn at once to that fact, one of the most striking in the annals of the world, of the sudden fall of this country from greatness to ruin, and seek its cause. It is near the close of the fourteenth century that our modern historians have fixed the beginnings of a new order in the relations of Europe. Italy has thus far been the centre of learning, of art, and a ripe social civilization. Her commercial republics were the municipal centres that survived the broken Empire; and even in its decline it is an age of glory. Florence is magnificent under Piero di Medici; her Duomo towers over a world of art, and her citizens are kings; Venice still weds the Adriatic with her jewelled ring; Milan and Genoa obey the Sforzas; the Papal domains, during the long exile of the Pontiffs, have been narrowed, and Bologna, Ravenna, and other great cities are under their own *signori*. From the Alps to the Bay of Naples, the land is the garden of Europe; its merchants in their marble palaces wear the silks of China and the gems of India, while Paris has only the coarse splendor of a feudal day: poetry and letters have bloomed, while the North has nothing but the ballads of the Troubadour; Dante and Petrarch have created an immortal age; Greece has brought hither the long-lost treasures of classic learning, and Giotto covered the churches with miracles of beauty.

But in another half-century Italy has utterly lost her place in Europe. What was the cause of so sudden a change? It was not the loss of any of the essential elements of character that had made her free and great before. It could not have been from an immediate corruption, many as were the social vices of such a people. But it lay in the fact that the change of the whole continent directly affected Italy. We owe it, above all, to the genius of Guizot, that we may to-day clearly trace the rise and development of that monarchical idea, the centre around which all the forms of European civilization became grouped. By degrees, each of the great Northern Powers had consolidated itself from its earlier feudalism into a well-defined monarchy; and now, their internal conflicts settled, they were ready to adjust the bounds of the continent. Italy became the natural battle-field of these kingdoms. It was her misfortune that by her very system of separate republics she had not felt the social movements ripening beyond the Alps; and that peculiar type of civilization, shaped by her great municipal centres, once the secret of her growth, became the source of her weakness. There was no national unity to resist foreign assault. Milan, Florence, and

Venice were severed by mutual jealousies; and no solid phalanx could meet the armies of France, or Germany, or Spain. The history of this unhappy land after the invasion of Charles VIII. is only of a bleeding and dismembered body. The Pontiff, with Milan and Venice, call in Maximilian and Ferdinand; again Louis XII. returns, and the two great beasts of France and Spain divide the carcass. Republican freedom is gone; the prostrate states are at the mercy of mercenary chiefs; and Dante's picture is seen in all its horrors:—

> Che le terre d'Italia tutte piene
> Son di tiranne, ed un marcel devinta
> Ogni villano che parteggiando viene.
>
> For all the lands of Italy are full
> Of tyrants, and each base-born churl becomes
> A lord, if he a selfish party heads.

It is impossible to conceive a sadder chaos of all the elements that bind society together: no tie between cities; no confidence between palace and cottage; the gentry decayed; commerce faded; *condottieri* at the service of one petty state or another, friends to-day and foes to-morrow; mobs in every street, wearing their rival badges; bands of prowling soldiery laying waste the harvests of peaceful labor:—a decomposed corpse, where the foul gases and the swarm of loathsome worms were in full activity. There is no need that one who studies that history in this light should look farther for the cause of decay. The Italian was not a willing slave, nor had he lost his original power; but he had no breathing-time to recover amidst the rapid movements that swept over him. It could only be when he had learned by long struggle the need and the secret of national unity, that Italy could have its resurrection.

We have shown the chief cause of the political and social ruin of the land. But we must here consider especially one of the elements, mingled with this result: we mean the Papacy. It is not our design to pour the vials of Protestant scorn on the Papal power: we would do justice to its good as well as its evil. A power that had grown in the chaos of the Middle Age from simple Bishop of Rome to Prefect, and then feudal lord of the exarchate of Ravenna, the Pontificate was for a time, without doubt, the necessary prop of a tottering world, the centre of religious ideas, the teacher of letters and art, the protector of the weak against the lawless chiefs who had no reverence for any lesser authority than that of the Vicar of God. Nor are we inclined to attach any greater blame to the ambition that led the Pontiffs to create an Italian principality, than to any other efforts of an age when all were grasping plunderers. But the vice of the Papacy was that it claimed, as a divine and changeless type, a power which had only been given it by the conditions

of European society. It was a feudal sovereignty, useful for its time, but, when its age of true social influence passed away, fatal to the growth of civilization. It remained an ecclesiastical state, whose affairs were in the hands of the clergy, and whose chief aim to sustain its divine pre-eminence; and as such, under pretext of a higher religious right, it defied king or state, and choked the very life of social liberty. This radical evil was felt above all else in Italy. In an age when all the energies of the European mind were awakening into new birth, in the very land where the revival of letters first appeared, where were the germs of a high social civilization, there could be no hope for any national union. But, again, when we consider the relation of Italy to Europe, it is impossible to doubt that the peculiar character of the Roman principality was the *point d'appui* for all foreign intervention. Most of the Pontiffs had been Italian in their sympathies against Germany and France. But the very position of one who was both a Catholic Head and a Roman prince was a self-contradiction. It gave him a plausible pretext, if he were quarrelling with his brother princes at home or with his rebellious subjects, for summoning the Northern Powers to his aid as the Vicar of Christendom; and it gave them equally the right, if they quarrelled with his spiritual authority, to invade unhappy Italy. The Pope was thus by turns a despot and a victim; and in either case the land must suffer. There was, indeed, an age when the hope of a national unity under the Papacy seemed to dawn on distracted Italy,—when Julius II., the martial Pontiff, sought to realize the dreams of his ambitious predecessors and reign over a great ecclesiastical kingdom. France retired from the field, and, after the clash of war, art and classic learning bloomed anew: Michel Angelo hung the dome of St. Peter in mid-heaven, and Raffaelle covered the walls of the Vatican with angelic forms. But the entrance of the sixteenth century saw this brilliant Papal court rise "like an exhalation," to leave Italy a worse ruin.

What could the pageantry of a Leo X. avail to stay the earthquake of the Reformation, as it ran under the continent of Europe and shook it to the centre? Germany, France, England, felt it: religious and social freedom were born from it. Alas for Italy! it was broken in the shock. Again it became the battle-field of contending Powers; the Milanese was covered with the armies of Charles V. and Philip II. Each Catholic protector crushed it in his gripe. It writhed like the Laocoon, in the coils of the Northern serpent, stretching its vain hands to shield its dying children.

Such was its history for two long centuries, down to the age of the French Revolution. It had remained the spoil of Europe. It could not lift the weight resting on it. But now comes the new era, which we shall very briefly sketch, as the

necessary preface to the awakening of to-day. The conquests of Napoleon overturned the old landmarks of Europe. He set on his own head the iron crown, and parcelled Italy among his generals; but with his fall its former masters resumed their claims, and by the compact of 1819 Austria received Lombardy and Venice, Naples was surrendered to the Bourbon race, and Genoa attached to the little kingdom of Sardinia. There was not a single thought in the minds of those holy allies of a national right on the part of Italy. It was treated with the same brutality, as a shipload of Christian captives sold in open market by Turkish corsairs. But with the vast struggles of that period, ideas of national liberty had been sown over all Europe. We are beginning to read that life of the French dictator with other eyes than those of a Scott or an Alison. The first Napoleon, like the third, wielded his power only because he represented the new social life of his time. He was emperor by the will of the people; and the great blessing he bestowed—for which freedom should always revere his name in spite of his wrong-doing—was that the fixed traditions of absolutism, the policies of the Metternichs, the heavy strata of ages, were torn by the Plutonic fires that shot from the centre. There was awakened everywhere the thought of a national unity, instead of a partition of Europe by a family of hereditary despots. Italy in 1820 began to feel the movement, and it was soon alive in every part. Sardinia demanded a constitutional government; Genoa reared "the green, red, and blue," the tri-color of the nation; Naples exacted from Ferdinand the promise of reform, but, with the instinct of a Bourbon, he soon fell back on the proviso of Austria, that "no principles should be allowed irreconcilable with those adopted by her in the government of her Italian provinces;" and his retractation was followed by revolt. But this convulsion summoned again the allied despots; and in the ancient Verona, looking down from the slope of the Alps on the glorious plains, Italian nationality was crushed by Austria, Russia, Prussia, and France. Her noblest patriots, her men of letters, were driven into exile; her Pellicos were smothered in the dungeons of the Spielberg.

More than twenty years passed over the prostrate country; the armies of Austria were fastened on Lombardy, and there seemed no hope of freedom. Yet in the great centres there had been a steady growth of the national idea; and, above all, Sardinia had become the home of a free, constitutional government. We turn our eyes to this little state, destined to lead the van in the coming and glorious struggle. It had been hitherto a dukedom of Savoy, more French than Italian, and held as rather a barbarian power in that classic land. But under the shadow of the Alps, apart from the enervating influences of the South, it had grown strong, its peasantry hardy

soldiers, its cities a refuge for flying patriots, and bristling with liberal ideas,—a compact and stalwart kingdom, fitted to be the champion of Italian nationality. It had a noble leader in Charles Albert. We cannot think it a just and generous criticism, pronounced on him by an English reviewer, that he was a selfish seeker of the crown of Lombardy. Undoubtedly he was at first a bigot; but his political and religious growth had kept pace with his people; and if dreams of personal ambition mingled with his ideas of Italian liberty, it was still a far more unselfish spirit than that of the slavish princes around him; his sacrifices in that great cause should hallow his name forever, and atone for his defects. The horizon was everywhere bright with the streaks of morning, and Rome itself was astonished by the miracle of a liberal Pontiff. Who has forgotten the first burst of enthusiasm that broke from the heart of Europe and America at the generous efforts of Pio Nono? at the courage with which he strove to reform the vices of a Papal system, relaxed the canon law, appointed wise laymen instead of tonsured officials, and offered religious freedom to the people? He was hailed in speech and prophetic song as the Father indeed of Italy; and had his honest desires been wedded to a strong will, he would, in the phrase of an Italian patriot, have held the nation in his two hands. The Revolution of Paris in 1848 fired the train, and national freedom was proclaimed. But why should we repeat the sad story of another defeat? Those two great captains, Charles Albert and Radetzsky, met in pitched battle; but Piedmont could not conquer Austria single-handed. Italy had not yet learned the need of unity in action. Mazzini, honest and lofty in his aims, was dreaming only of an ancient republic: his jealousy of a Piedmontese monarchy created division, and division at such a time was ruin. Charles Albert uttered then the truth, now learned by long struggle, "The throb of my heart was for Italian independence; but Italy has not yet shown the world that she can conquer alone." It was in vain, after that defeat, that the republican leaders sought to renew the hopes of liberty; in vain that Mazzini cried, "The war of kings is over; the war of the people is begun." Florence raised the flag; Genoa followed; Rome rose in riot, but the patriot Pontiff had recoiled at the spirit of freedom he had called up from the dead, and he had sunken into the traditionary puppet of the Vatican. It was the effort of despair. Once more Charles Albert met the Austrian before Milan; but the battle of Novara quenched all hope. "This is my last day," said the hero, as he stood asking for death amidst the storm of bullets at the gates: "let me die." The imperial flag waved again from the walls; France entered the Roman States, leading back the Pope; and Garibaldi fled, to bury his

heroic wife in the marshes, and to wander over the world ten years more, waiting for the resurrection of his country.

That resurrection has come. As we look back on this history and scan the causes of the long struggle, we must surely see in the character of the Italian people the elements of a strong and lasting nationality. Had there been no such result as this of to-day, the past would prove them to be by no means a race dead to the love of freedom, emasculated by habits of slavery, as we have been wont to dream. It has been, we think, clearly shown that their long degradation was their misfortune far more than their fault, that every growth of national union has been crushed by foreign intervention and by the anomaly of a Papal principality. The struggle for Italian independence has never died out of the heart of that people. Yet we might have said that it was at best a wild and fitful enthusiasm. But the events of the time have added their full evidence. Italy wished to throw off all foreign yokes; but it could only reach this through years of thought and suffering. When Michel Angelo was seventy, he drew a picture of himself in a child's go-cart, with the legend, "*Ancora imparo.*" Italy, aged Italy, is not too old to learn. Here we understand the real meaning of its present revolution, and we can now turn to it with a true historic insight. It is not merely the result of a battle of Solferino or Magenta, not merely that Austria has been driven from Lombardy, that gives hope for the future. Those triumphs might have been followed by no lasting fruit had they not been preceded by the national development. From the day of the last struggle, when Charles Albert resigned the throne, and Italy had a young king, and a settled policy under Cavour, it has steadily ripened. A flippant Englishman in the "Times" calls its successes "a chapter of lucky accidents"! With what mole's eyes this little islander reads history! We shall find that "chapter of accidents" already sketched in the preliminary chapter of twenty years. We see, first, a thorough preparation of all the social resources of Piedmont: we see her become in twenty years the centre of education, of commercial energy, of religious freedom in North Italy; we see the idea of national unity vigorously planted in state on state, and all turning their eyes to this leader. We see the masterly stroke that sent an army to the Crimea, and gained Piedmont a place in the councils of Europe in spite of Austria. We see the skill that secured France by a family alliance. All these were steps towards a foreseen end. Nor were they merely sagacious moves on the chess-board of Europe, like those of the great player of France: they were growths of the mind of a whole people into an enduring manhood. And when the campaign of Lombardy was over, the true result was yet to come. We see in the peaceful act of these states, surrendering the feuds of ages

and uniting in one organic whole, the ripe, consummate fruit. There is, to use the most expressive word of modern statesmanship, the solidarity of a nation. A war like this gave only the occasion; but it is the concurrence of the outward event with the inward preparation that marks the historic providence. We have no strong belief in the purpose of Louis Napoleon to rear an independent Italy, although we give him full credit for his generosity of action, even if he sought, in aiding Piedmont, to destroy the monopoly of Austria and avenge old, unforgotten wrongs. But that strong alliance gave Italy all it asked. It needed only that one great Power should keep another at bay until it could rise and stand upright. Napoleon paused at the moment when the work needed him no longer. We well remember with what indignation that sudden peace of Villa Franca was received, and how ready all were to reproach the emperor for the desertion of his friends in the midst of the battle; and yet, whatever his motive, it was, next to the victory, the best boon of Providence. Had he gone further,—had he driven Austria from Venetia, and freed Rome,—he might have remained the dictator, not the ally, and Italy reposed only under the shadow of a new master. The nation was left to complete its own work, and to prove whether or not it was worthy of so great a gift as liberty. Nor do we believe that he had any conception of the great act that was to follow. He saw no further than an Italian confederacy, a discordant mass of states, soon perhaps to be broken as before, and always open to intervention. But Providence saw better than those keen diplomatic eyes; and when, after the strife was ended, the states struck hands in one national faith, there was indeed an Italy from the Alps to the sea.

When, in the day of its liberty, Florence built that Duomo still looking down like a vision of the past over the city, the Grand Council issued a decree, whose words should never be forgotten, declaring that this was done by the resolve of the wisest citizens, forasmuch as "no common works should be undertaken unless there be a fixed purpose to do them in a manner agreeing with that great common heart which flows from the united thoughts of all citizens, who in this have but one will." And so rose the Duomo of the national union on that great day of peace,—of living stones cemented by one will, and more enduring, as we trust, than the stateliest monuments of that classic land.

But we have here to answer a charge which has been made against the act of Piedmont—or rather the new kingdom of Lombardy—in annexing to itself the Italian states,—a charge lately repeated by the ablest of our Roman Catholic reviews in a criticism of a romance of Ruffini. It is, indeed, generously admitted by the writer that the national unity of Italy is a

blessing, however won; and he seems even to hold with Passaglia the separation of the spiritual from the temporal rule of the Papacy; but he still maintains that the *plebiscitum* was a lawless invasion of old and established compacts. It is, he affirms, to surrender the very principle of government we are fighting for against rebellion, if any people of a state can vote itself out and annex itself to a new Power at will. We cannot but think that the scales of ecclesiastical absolutism have fallen on his clear eyes. The rebellion of our States is *against* a constitutional government, a law representing the national mind and will. The revolution of Italy was to secure a constitutional and national law against Powers either foreign or the dependents of the foreigner. Had any of these states—Tuscany, Parma, Naples—enjoyed such liberty? Had not the history of each been the history of broken contracts and perfidious rulers? Had this great land of Italy no claim to be a nation, if it wished for national existence? Was not the right of revolution, which this writer allows in cases of extreme oppression, justified and sanctified by every national feeling? Were those compacts of ruling families, which had been made without any choice of the subject, and forced for years by Austrian armies, to be held sacred, more sacred than the compact of the Almighty when he made Italy a great people and capable of unity? If such a right have no foundation, we may as well surrender forever the hopes of a rational and noble freedom; if a holy alliance of European kings has power irreversibly to destroy a great people, and its laws, imposed by selfishness and backed by bayonets, are binding on the conscience of its slaves, Italy was indeed a lawless rebel. No: we defend no mad outbreak of selfish men against constitutional government. We defend our America as a nation, fighting for national unity and liberty against a slaveholding tyranny. We defend Italy, as acting in behalf of a right inherent and indefeasible. The vote by which these states annexed themselves to Piedmont was the calm, deliberate affirmation that Italy was capable of national life, and foreign power must intrude no longer.

THE PROBABLE INFLUENCE OF THE NEW MILITARY ELEMENT ON OUR SOCIAL AND NATIONAL CHARACTER.

BY CHARLES ASTOR BRISTED.

IT is a wonderful and startling change this, our transformation from the most unmilitary nation in the civilized world to—perhaps not exactly one of the most military, but one of those having the largest armies! A strange sight, this half-million and more of men, sprung up like the Cadmus-sown dragon-teeth! If the "peculiar institution" were—as it seems likely to be—swept clean away out of existence, its disappearance would not be a greater phenomenon than the appearance of this new element. A new element, and a permanent one; for they are as short-sighted as sanguine who suppose that this year, or next year, or the year after, nine-tenths of our officers and soldiers are to retire into private life. For some time to come we must expect to keep several hundred thousand men under arms. The complications of our foreign politics alone are enough to render a large army necessary.

When men of middle age, who were brought up amid the profoundest peace, look back on their early impressions of soldiers and military life, they are astonished in very spite of themselves at the recollection of the abhorrence with which they then regarded what are now the objects of their pride and honor. Armies were ranked with kings and nobles as Old-World encumbrances, with which we had happily been able to dispense. Indeed, the idea of a monarchy and aristocracy being established among us would have appeared to most of our people nearly or quite as probable as that of a gigantic army becoming indispensable. The popular idea of a soldier—at least throughout the Eastern and Middle States—was a barbarous, un-Christian, behind-the-age, much-to-be-avoided personage, the antagonist of reason, and the incarnate representation of brute force. In a political work of no small ability, written barely ten years ago, we find this passage:—

"The soldier, nursed in blood and robbery, however mildly and gently he conducts himself, is at best only a tame tiger, not rashly to be trusted."*

Whatever effect the Mexican War may have had in the South and West, it certainly did little to change the prevalent feeling throughout the rest of the country. Those who supported it did so chiefly on party grounds; those who opposed it took the ground not merely of opposition to this particular war, but of

* Hildreth's "Despotism in America," p. 143.

hostility to wars generally, as barbarous and anti-Christian. The readiness with which volunteers offered themselves brought out the fact that there was a good deal of military spirit and military material latent in the country; but it was a fact soon lost sight of by both natives and foreigners.

T. C. Grattan, whose remarks on America were not generally characterized either by accuracy or profundity, made a better hit than usual when he noticed (in 1859) the capacity of our people for being moved in masses, as an ominous germ of military strength; but few strangers agreed with him; and, at the beginning of our troubles two years later, there was a very general opinion abroad that we should not be able to raise a serious army!

The great change of fact has brought with it a corresponding change of opinion, and has shown that our ideas of the soldier were in a great measure the result of an ignorance of the worst kind,—that sort of ignorance which has a plausible basis of truth. Our present object, however, is to discuss, not the alteration of opinion about a certain class, but the future influence of that class as a now important element in society. It may guide us in, or at least prepare us for, our speculations, if we briefly examine the social and political position of the soldier elsewhere.

On turning back twenty, or even fifteen, years, we find the relations of the English army to society no more creditable than those of our own, perhaps less so. Here, it was a nonentity, a sort of tradition; there, it was ridiculous, or worse. During a long spell of peace the doctrines of the economical school had in their progress tended to make the army unpopular; and it must be confessed that the conduct of its members had not been exactly such as to diminish this unpopularity. There was a growing impression that its rank and file were filled from the ne'er-do-wells of low life; while its officers were supplied from the most ignorant, and certainly not the most virtuous, of the upper classes. Their want of education was a standing joke with English satirists; and want of education was not the worst charge brought against them. A regiment was apt to be the terror of the town where it was quartered. The freaks of the younger officers among themselves and the townsmen varied from the pranks of overgrown schoolboys to the orgies of "plug-uglies" out on a holiday. Hard would it have gone with England when suddenly exposed to the shock of war; but, most fortunately for her, a splendid system of national sports and manly exercises had kept up a physical material which no length of idleness could rust, no amount of mismanagement spoil.

The rude lessons of the Russian War, with its striking contrasts of personal bravery and administrative incapacity, were

not lost on the English Government or nation. On the one hand, a rigid system of examinations was adopted, which has already removed the stigma of ignorance from the army;* on the other, its exploits in the Crimea, and afterwards in India, made it extremely popular. Still, we can never expect it to form a predominant element in English society. It is not large enough in proportion to the whole population, and much of it is scattered abroad. It has not sufficiently numerous points of contact with the nation. Nor can we expect the English, without total disruption and reconstruction of their society, to become a military people. The volunteer movement in 1859 and '60 clearly showed their unmilitary character. Magnificent as a popular uprising and demonstration against foreign menace, it must have presented many ludicrous points to the professional soldier.

We cross the Channel, and at once find in this, as in many other respects, a great change. But here we must discriminate. It seems the merest truism and platitude to say that the French are a great military nation; yet this proposition is often so stated and so understood as to be any thing but true. In the time of the first Napoleon it *was* correct in its strictest application. France had then no industry but what was warlike, and little art or literature that was not more or less connected with war. At present there is indeed a strong military element in French society, but also a very strong industrial and peaceful element, generally alluded to by the emperor and his tools under the disparaging term of "vulgar interests." This was exemplified at the time of the Italian War. Broad as the assertion is, it may be safely affirmed that no Frenchman unconnected with the army or the Government desired that war. Could a free popular vote have been taken on the question, the majority for peace would have been immense. To-day we see a similar illustration of the fact in the public feeling against the iniquitous invasion of Mexico,—a feeling so strong that the emperor's own relations and right-hand men, with all their impudence, could not altogether deny or condemn it. The truth is, that the French belligerent propensity—like all propensities, national or individual—may be greatly modified by encouragement or discouragement. The "present head of the state," owing his throne in a great measure to the bayonets of his troops, and needing a constant supply of foreign "glory" in order to drown the voice of discontent at home by the shouts of victory, has naturally encouraged warlike tastes, and petted the

* Some of the largest and most influential schools in England at present are those like Cheltenham College, which combine a civil and a military department; and it is worth noticing that in them the military department (for such it is in fact, though not always called by the name) is constantly gaining on the civil, both in numbers and reputation.

men of the sword at the expense of all other classes. Great license is allowed all soldiers. Crimes which a civil court would visit with long terms of imprisonment are dismissed by a military tribunal with a few weeks' confinement. Duels were indirectly encouraged, till the officers, not finding civilians or strangers enough to prey on, turned upon one another, and made such a consumption of themselves that the Government was obliged to interfere and check the practice. French officers—though usually men of good education, and frequently men of the best families—are too often distinguished by a swash-buckler, *sabre-trainant* air, which makes them the reverse of agreeable in general society. Even in their own country they behave as if *en pays conquis*. Why should they not? They *have* conquered it. It does not require a long residence in Paris to perceive that France is under the reign of the sabre. There was as much truth as wit in Punch's parody, "*L'Empire c'est l'épée.*"

Let us now go eastward, over the Rhine. We still find a strongly predominant military element, though its predominance is manifested in a way less unpleasant to the stranger, whatever it may be to the inhabitants. In some respects the army is even more fashionable than in France. There are small capitals, like Stuttgard, where the business of every young man in good society seems to be playing at soldiering.

When we recollect that, by the laws of most German States, *every man* capable of bearing arms is compelled to pass *at least two years* of his life in *active* service, we might expect to find a considerable amount of military knowledge and habitudes diffused among the people. Nevertheless, it cannot be affirmed that the German armies represent the people or the popular feeling, except on extraordinary occasions, such as the threat of a French advance to the Rhine. To be sure, there is not the same rough-riding over the *pékins* that is practised in France. If the stories of Austrian brutality in Hungary and Italy are correctly reported, we must suppose that the Austrian officers keep their bad manners for external consumption, as landsmen are said to do their old clothes for sea-wear, and decorous Anglo-Saxons their bad morals for Parisian use.

Of Russia it is sufficient to observe that all social distinctions there are founded on the grades of military rank. This one fact shows the predominance of the military element, a predominance perhaps required in the present stage of Russian civilization.

It will not be necessary to go through all the European nations in detail. As a general rule, we may say that excepting some free, but third-rate, states, such as Belgium and Switzerland, we find throughout Continental Europe a strong military element in society, more or less dominant over the civil

element, directly sustained by the Government, and mutually sustaining it.

Now, we in our free institutions resemble the English, but in the size and proximity of our army the Continental nations. Which are we likely to resemble in the relations of our civilians and soldiers? The question assumes a certain importance as we recall the frequent predictions of "military despotism" hurled at us by enemies abroad and too readily re-echoed by false friends at home.

On comparing our armies with the European, we immediately perceive a fundamental and radical difference, which covers the whole ground. A European army* is a body of men distinct from the people. Its mass must, of course, be derived from the people,—even some of its officers may be; but its immediate dependence is on the government. It is that government's creature. It is looked to by government for support, if necessary, *against the people*. Its duty is not only to fight the enemy in time of war, but to keep the people quiet in time of peace. So natural is this view to a European that we have seen it set forth in French nursery-books:—

"Papa, what are soldiers for?"

"My son, first, to defend us against strangers [polite French for "conquering" other people's territory]; then, to prevent bad men from overturning," &c.

And this is the great obstacle, after all, to a general reduction of armaments. If the emperors and kings had only one another to fear, they might make some common agreement which would enable them to divide their armies by ten, or even reduce them to smaller fractions; but who then would take care of the Red-Republicans and Socialists and other monsters at home?

Our army, on the contrary, is the creature of the popular breath. By that it lives. The people made it, as they made the war. Suppose a large majority of the country opposed to this or any war: how long could the Government carry it on?

"Le combat *cesserait* faute de combattans." Suppose, in time of peace, a decided majority resolved that the army ought to be reduced: how long could the Government (supposing it wished to) stave off that reduction? In short, *our army is the people in its military phase and capacity*, the fighting development of the nation.

We see this principle carried out in every detail. Where has there been any antagonism between the people and the army? In some places mobs have been put down by military force, but in almost all these cases the rioters belonged to the very worst part of our foreign population, and all respectable citizens hailed

* Except in the cases already mentioned Switzerland, &c.

the troops as their deliverers. See, on the other hand, what the public has done for the soldiers, particularly that stupendous and unprecedented organization, the Sanitary Commission! *that* shows how the deserts of our brave warriors are appreciated by their countrymen and countrywomen.

What rubbish is it, then, to talk of "military despotism,"—a despotism to be erected by the people out of and over themselves! Perhaps there may be instances in which a minority will feel itself aggrieved by military action; but a minority is always liable to suffer somewhat at the hands of a majority. Such a possibility is inseparable from the nature of our government,—nay, something like it is inseparable from the nature of any government, since no philosophers have yet been able to construct a scheme for limiting the sovereign power by legal process.

And for the same reason that we dread no political we dread no social tyranny. The French officer looks down upon the *pékin*, not because he is a soldier, but because he is a soldier of the Government, which lords it over the people and encourages its dependants to do the same. No such feeling can work upon the American officer: he is the defender and representative of the country and the people.

There is, however, a third danger, which has a semblance of foundation, namely, that we may become infatuated with military glory, like the French, so that our soldiers will prefer fighting for its own sake, and seek for other wars as soon as the present shall have been finished, while our people will applaud results to the causes of which they had the good sense to object. The large and loose way of talking in vogue among our editors has given some encouragement to this idea; and there is reason to suppose that the Western European nations have become seriously alarmed by it, and that it is a main cause of their hostility to the restoration of our Union. But the bulk of our nation has taken this terrible contest much too seriously and soberly to be inspired by any such ideas. It may be that here and there a contractor or a political general takes pleasure in or derives profit from the continuance of the war: the bulk of the people have accepted it only as a sad, sad necessity. And when it shall have been terminated by the triumph of the right, then, to say nothing of our subsequent exhaustion and the new delights of peace, are we so vindictive as to think immediately of revenging the slights or injuries of foreigners? No! we are a better-natured people. Vain and sensitive we may be, but not of those who "treasure up a wrong." It may safely be presumed, too, that when our hands are free, or nearly so, at home, the Europeans who have been presuming on our weakness will speedily operate a change of base, calculated to diminish the risk of collision. And while we do not perceive any appreciable danger to our national liberty or our national *morale* from the new military

element introduced among us, we do discern some very positive good effects from its introduction.

In the first place, it will become more fashionable and more popular to attend to physical development, which had been too much neglected for the exclusive culture of intellectual, or, if that be too high a term, of sedentary, pursuits. We were notorious for the grossest neglect of our *physique*, spasmodically broken in upon by the freaks of half-crazy "dietetics" and the almost equally pernicious exaggerations of extraordinary gymnasts. It is useless to dilate on what has been so frequently noticed of late years by an at last awakened press; but there are two points which deserve brief remark. The first is, that the recreations or exercises which we did patronize were in almost every instance precisely those of the least beneficial kind. Thus, the fashionable amusement *par excellence* was dancing,—one of the unhealthiest ever invented, from its late hours and other concomitants. Of the thoroughly national and popular amusements, perhaps the most general was driving fast trotters in light vehicles, which combined the greatest exposure to summer sun and winter cold with the least exercise; and next came ten-pins and billiards, games which require a stooping posture and usually a confined locality.

The second is, that the question has a moral side, not so generally remembered. When the good sense of the English put down duelling, they still had their athletic sports, not altogether devoid of peril, to keep their wealthier and professional classes from becoming utterly unacquainted with physical danger. But we possessed no such resource; and, consequently, it might happen —it did happen—that hundreds and thousands of our citizens passed through their lives without once having their physical courage tested in the remotest degree. It was this undemonstrative mode of life among the more respectable classes that gave such power and encouragement to the rowdy and ruffianly element in our large cities.

The movement towards physical regeneration had already commenced before the war (lucky for us that it did!); but the war has done much, and will do more, to further it. One already sees more children riding in the vicinity of our cities than one used to see men. Indeed, the importance attached in various ways to the physical culture of the rising generation is a most gratifying feature of the day.

Soldiers must be men of considerable physical strength or endurance, or both; and, as uniforms are sure to be popular and fashionable, manly qualities will also become so. Of course, we cannot expect every thing to be done in a day. Thus, to make Americans use their feet habitually for ordinary purposes of locomotion, is a change so stupendous that it will probably require a generation to effect it, if it is ever effected at all. But the

progress already made is an augury of much hope for the future, all the brighter because the movement has been gradual, natural, and not attended by any extravagances.

Next, the presence of a military element among us will develop social liberality, by bringing about a more correct appreciation of some classes of men who have a value and place in society, hitherto rigidly denied them.

Our attention to the business virtues, while it had many excellent results, made us in some respects uncharitable. Not merely were the lusts of the flesh regarded as the most deadly and almost the only deadly sins; not merely was "a very bad man," according to the Puritan standard, one "loose in morals and dissipated in personal habits;" there were many good-natured, unambitious, and somewhat indolent individuals who, without any decided moral criminality, fell under the ban of the hard-working community for their idleness. These persons, who have their representatives in all countries, are not exactly silly or stupid, but they have a mental or intellectual indolence which disqualifies them from ever making a prominent figure in an ordinary business or profession. They are fond of the *far niente*. They prefer shooting and fishing excursions and country rambles, to the confinement of an office or shop. Their bodies are usually better developed than their intellects.

Now, probably every man throughout the country can recall from the list of his personal acquaintance some of these "detrimentals" who have done the country worthy service during the war. One has fallen gloriously on the field, and is already inscribed in our book of heroes; another has attained a public and social position which must astonish even himself. What is the inference? Not that idleness is in itself meritorious, still less that vice is commendable, but that men are not utterly worthless because unfit for study or business. Having been worth so much in the war, they may be fit for something out of it. They may give repose and relief to society, and help to prevent the machine from bursting by too much steam. Above all, their case may well make us consider whether an extra-rigid *régime* of industry, while it keeps some men out of vice, may not drive others into it.

Another effect, and the best of all, will be the establishment of an orderly spirit and a settled regard for law.

It is often said that all the lawlessness which has so long infested our country should be put down to the account of slavery; and much of it ought certainly to be charged in that quarter,—much even of the occasional tendency to illegal measures on the part of anti-slavery men. For it was the nature of slavery to foster lawlessness by making as well as by breaking law, its favorite enactments being of such a character that the soul of every self-respecting man instinctively rebelled against them. The

lowered character of the ministers of law, caused by the establishment of an elective judiciary in several States, may also have had something to do with diminishing respect for the law itself. But, whatever the cause, the effect was indisputable. A general and growing disregard for law pervaded the land. For this dangerous feeling an infusion of the military element is the best corrective. Men trained in the stern, unyielding discipline of the camp, knowing by experience its power and value, will not be apt hastily to violate the law of the land themselves or excuse its violation in others.

We are quite aware that efforts have been made, and will be made, to show that the very reverse is the case. There is a vast howling among the Copperheads and "Sympathizers" about the suppression of civil justice by military force. But whatever anomalies of this kind have arisen are owing to the strange and illegitimate position in which the pro-slavery party had placed the laws. With them, obedience to law was a "heads-I-win-tails-you-lose" game. Whenever a legal authority could be made, by any process of subtlety, to tell in their favor, it was rigorously enforced; whenever it stood in their way, it was disregarded. When their power was lost, they began to denounce as injustice the deprivation of license to act unjustly. The very men who bawled out most loudly against the wickedness of arbitrarily arresting traitors were those who hounded on "Governor Seymour's friends," the wild Irish of New York, to burn and plunder and murder, and convert the metropolis of the Western Continent into a pandemonium; and, when a few of the wretches had partly paid the penalty of their crimes, these same men again cried out lustily against the presence of the military who had saved the city from general pillage and slaughter. So, too, in the South, the villagers who connive at the assassination of our soldiers complain of the destruction of houses which gave refuge to the assassins. It is impossible that such a "muddle" should be righted with all the ceremonies in use during perfect peace; and the common sense of the country has already justified our soldiers in deciding that men cannot at the same time repudiate the authority of the laws and claim their protection.

We do not pretend to have exhausted this theme, so pregnant with interest; but enough has been said to show that while we need apprehend nothing from the new element necessarily introduced into our society, several of its tendencies are directly and strongly beneficial.

THE MILITARY POWER OF RUSSIA.

BY LIEUTENANT-COLONEL C. W. TOLLES, A.Q.M.

PROPERLY to estimate the military ability of any Power, it is necessary to consider not only its armed force, but all the general characteristics of its national life. An effective military organization is the result of a large number of constituents harmoniously combined. To produce it, a nation must be homogeneous either in race or interest, patriotic, and animated by a uniform idea of its destiny. The Government must be *en rapport* with the people, and secure from insurrectionary disturbances. There must be an educated class, from which officers can be selected. The material resources of the country must be adequate, or its commerce must supply the means for accumulating the munitions of warfare. Its industrial and productive abilities must be in an advanced stage of development. A cursory examination of the condition of Russia on these points will convince us that it possesses all the necessary elements of military greatness. The only disturbing component in its organization has been the condition of Poland; but, from an announcement in late European intelligence, we are led to the belief that the disorders prevailing in that country will be pacified by an important measure about to be adopted. It is stated that Russia has decreed the emancipation of the Polish serfs and intends to render them independent of the nobles. This is not the first attempt of Russia to reform Poland by a policy of liberal government and efforts to elevate the condition of the people; but hitherto her designs have been thwarted by the numerous insurrections. Now, it would seem, she has determined to execute vigorously the same radical measure of improvement so successfully introduced within her own proper domain.

The chief curse of Poland, while it existed as an independent nation, was the immense number of the noble classes, their constant factions, their inveterate hostility to reform, and their entire separation from the interests of the people,—or rather of the serfs; for, properly speaking, there was no Polish *people*, but only a race of oppressed bondsmen subject to the nobles. Too jealous of each other to permit a new royal family to be created from their own ranks, when the old Polish line of kings became extinct, the nobles resorted to the expedient of electing foreign potentates for their monarchs, then fomented opposition to the authority thus instituted, and kept the kingdom in a state of constant anarchy. Finally, a great faction became devoted to Russia, appealed to it for assistance in electing their candidate to the throne, and, by their desire, the Empire of the Czars was

first induced to intervene in the affairs of the distracted country, —an intervention which the progress of events converted into conquest. The measure now adopted by Russia will accomplish more for the elevation of the country than a successful insurrection.

Obtaining our ideas chiefly from English and French writers, public opinion in the United States has been greatly misinformed in relation to the whole internal structure of the Russian Empire, its aims and its enormous capacities for future development. We have been accustomed to consider its government as a most absolute despotism, supported only by the army, and exercised over a half-barbarous and unwilling people purposely kept in profound ignorance. These are altogether mistaken opinions. The government has the patriarchal characteristics so congenial to Oriental tastes. It is an absolutism, but one which is adapted to the people, which is in sympathy with them and provides for their necessities. Communal freedom exists in many of the details of municipal affairs, and, since the recent changes, additional opportunities for the exercise of self-government have been conferred on the people. The latter are most enthusiastically patriotic,— devoted to the Czar, to their Church, and their country. A well-informed writer says, "Their country, the country of their ancestors, the Holy Russia, the people fraternally united under the sceptre of the Czar, the communion of faith, the ancient and sacred monuments of the realm, the tombs of their forefathers,— all form a whole which excites and enraptures the mind of the Russian. They consider their country as a sort of kinsmanship, to which they address the terms of familiar endearment. God, the Czar, and the priest are all called father, the Church is their mother, and the Empire is always called Holy Mother Russia."

With such feelings among the people, it can easily be conceived that the representations given by English writers concerning the internal condition of the empire are altogether deceptive. Instead of tyrannical absolutism, there is adaptation to the people; instead of compulsory submission, there is devotion.

Whoever has forced himself to struggle through the tedious volume of Kinglake on the History of the Crimean War will recollect that the impression there given, with a tiresome redundancy of language, is that the late Czar, animated by his ambitious designs on Turkey and determined on conquest, made strenuous efforts to engage the people in his merely political designs, by exciting them to a religious crusade.* The Czar and

* While constrained to acknowledge—as must every person at all acquainted with the history and policy of Russia—that the unanimous sentiment of the nation has for a long time been in favor of the conquest of Turkey, Kinglake endeavors to create the impression that the Czar was hypocritical in his religious feelings, while the people were instigated by religious motives alone in the desire to see the Crescent supplanted by the Cross. His aim is to exhibit

the people are represented as two distinct and unsympathizing parties. Other writers also speak of the Russian Empire as an unorganized mass of heterogeneous nationalities. But the truth is, that although there are many races within the vast domain of Russia, her controlling policy is of a uniform character, has the entire concurrence of the people, and no more discordance exists than in any other nation. A book published in 1856, by a writer familiar with Russia, says, "The native Russian holds the same relation to the other inhabitants of the empire that the native Americans do to the other population of the United States. The active, energetic, 'pushing' man everywhere in the country is the native Russian. For him others make room. The Russian may properly be called the Yankee of the East. By no means exhibiting now the lofty qualities of the Anglo-Saxon mind, there is yet in him a true life, whose power and destiny cannot, as yet, be accurately measured. One might unite an American idiom with a Russian phrase, and say that the Russian is 'bound' to 'find out something.' The man whom Americans call 'shiftless' the Russians describe as 'one who can find nothing out.'"

Semi-barbarism is also charged against the Russians. Mr. Buckle, in his "History of English Civilization," contends that as civilization advances war will decrease, and remarks, in reference to the Crimean War, "The peculiarity of the great contest in which we are now engaged is, that it was produced not by the conflicting interests of civilized countries, but by a rupture between Russia and Turkey, the two most barbarous monarchies now remaining in Europe. * * * That a peace should last for nearly forty years, and should then be interrupted, not, as heretofore, by hostilities between civilized states, but by the ambition of the only empire which is at once powerful and uncivilized, is one of many proofs that a dislike to war is a cultivated taste peculiar to an intellectual people." What would Mr. Buckle say in regard to his theory were he now alive and could see one of the greatest wars of the world's history raging between the two sections of the United States? Would he call us, also, powerful but uncivilized? What would he say to the Schleswig-

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the Russian people as devoid of attachment to the head of their government, and as merely the passive instruments of its power, even in enterprises according with their own convictions. The following quotation illustrates this:—

"It is true that the Muscovite peasants are not an enterprising race of men, and it might be hard, perhaps, to find a villager who, if he could have his choice, would rather be a 'Soldier of the Cross' than remain at home in his hut; but the people knew that, whether there were peace or whether there were war, the exigencies of their Czar's military system would always go on consuming their youth, and, since this engine of a vast standing army was destined to be kept up, and to be fed with their flesh and blood, they desired in their simple hearts that it should be used for a purpose which they believed to be holy and righteous."

Holstein imbroglio, and to the gathering premonitions of a great European struggle?

It is undoubtedly true that Russia has not yet generally attained the average height of European civilization; but the controlling influence of the country is in favor of education and internal improvement. If by scratching a Russian we still find a Cossack under the skin, to use Napoleon's expression, it is pretty certain that efforts are being constantly made to slough off the Tartar cuticle. The book already quoted states that some years previous to its publication there were ten thousand nine hundred and fifty-seven pupils in the army and navy schools alone; there were besides in other schools, under the care of the War Department, one hundred and sixty-nine thousand pupils. The writer says, "The whole of Russia is divided into university districts, with a district university in each, with subordinate schools attached, and at the head of them all is the national university of Moscow. It is a completely organized national system, which, when fully carried out, will make the means of education universal in Russia." We will quote further from this author some interesting details in reference to military and general education, which also incidentally afford information concerning the industrial advancement and material resources of Russia.

The system of Russian fortifications by which the empire is defended is separated into ten distinct divisions. In the old Michaeloff Palace, now the school of engineers, in St. Petersburgh, a separate hall is allotted to each of these divisions, in which is collected whatever can illustrate the character of the district which the hall represents and the fortifications which it contains. Here, for inspection and study, are plans, general and in detail, of all the fortifications of the empire, arranged according to their territorial divisions, and not only of all the fortresses, but of all that have been projected and are yet unfinished; and each particular fortress has a department by itself, in which are collected specimens of the materials used or to be employed in its construction, including bricks, and kinds of earth and descriptions of stone which can be found in the neighborhood, so that each pupil has in this way a local education in addition to his general scientific training. Here, also, as subjects for study, are accurate models, in wood and clay, of every fortification in Russia, presenting each with perfect exactness, so that not a single object, even to a tree, is omitted. By such means the study of the defences of each fortification, and the manner in which it might be attacked, may be conned as perfectly as if on the spot, and every cadet when he graduates is prepared for any post in the country, understanding beforehand all the local characteristics of the station to which he is appointed.

It is strongly significant of the traditional policy and prevailing feelings of the nation that here also is a perfect and most

minute plan of the fortifications of Constantinople; the castles of the Dardanelles, with every feature, are presented, together with the aspect and character of the Straits, so that every young Russian officer studies the nature of an attack on Constantinople in addition to his general preparation for war.

A single fact is sufficient to show the practical character of the instruction in the naval schools: the senior class of cadets annually take to pieces and rebuild a large model of an American frigate. The instruction in these schools embraces the higher mathematics, and their application to military and naval architecture and navigation, drawing in all its departments, both the theory and practice of the construction of fortresses and ships, with modern languages, history, and general literature.

The children of soldiers, and especially orphan children, are particularly cared for by the Government, placed in schools, and educated for the army. At St. Petersburg there is the Miner's School. It occupies a magnificent building, in which more than three hundred pupils are constantly studying, under competent professors, with every facility for obtaining an education having great breadth and thoroughness. In this institution the pupil spends eight years; and then, with as perfect a training as science can impart, he is sent to superintend the government mines in the Ural; and this school, and the number of its pupils, is enough to indicate the importance of that portion of the resources of Russia.

Attached to this important school is an immense and very complete collection of whatever can illustrate the sciences of geology and mineralogy, but particularly in reference to Russia. Here also are collected models of machinery and implements, and even of mines themselves. Artificial mines of various kinds have been constructed by the actual excavation of subterranean galleries, such as are found in the real mine; and a *fac-simile* of a mine in the Ural is produced with the real earths, rocks, and imbedded ores and minerals, precisely as they are found in the distant mountain.

The writer proceeds to notice a splendid academy of the fine arts,—a school of mechanical arts, in which two hundred sons of tradespeople receive a mechanical and liberal education and are distributed through the country to superintend industrial pursuits,—and various other schools for both sexes; also model farms, on which agriculture and all the arts useful to a farmer are taught to several hundred young peasants from all parts of the empire. Among the institutions is the imperial house of education, founded by Catherine II., in which *twenty-six thousand children*—the orphans of officers, or foundlings—are cared for, and educated to become teachers, being instructed also in seventeen different trades.

These statements are based on the condition of things as they existed ten years ago. Since then, as we know, Russia has greatly advanced in all the departments of national life. The system of internal improvements has been conducted on the same magnificent scale as that of education. Besides the vast river-system of the empire, numerous canals have been constructed, connecting the rivers and permitting inland commerce to traverse all parts of the country. The late Czar projected a comprehensive system of railroads, which are now in process of construction. The varieties of climate admit of the cultivation of all kinds of products. Even silk, wine, and cotton are produced in the southern provinces. The mountains of the Ural are filled with metals, and the Government employs those whom it has educated to mine and fabricate them.

Knowing these details concerning the internal condition of Russia, we shall be prepared to appreciate the power of an empire which commands the largest army in the world. To Americans, the proper understanding of the condition of that empire cannot fail to be interesting; for, whether formally expressed or not, a conviction prevails almost universally that the United States and Russia are destined hereafter to be in alliance for the exercise of important results on the history of the world.

Our information concerning the Russian military system is mostly drawn from the lectures of J. VIAL before the French Staff School, which contain the latest and most comprehensive accounts of it. It is composed of four different kinds of organizations,—viz.: 1st, the active army; 2d, the various special corps; 3d, the irregular troops; 4th, the troops of garrison and the reserves. There are in the general staff eight hundred and ten general officers of all grades, and in the staff corps about four hundred officers,—viz.:

8 generals-in-chief, or generals of the army,
19 lieutenant-generals,
37 major-generals,
86 colonels,
50 lieutenant-colonels (including 11 first captains of the guard, assimilated in rank),
79 first captains, assimilated to majors of infantry or cavalry,
68 second captains,
3 first lieutenants,
42 captains and lieutenants from the academy.

At the head of the active army, besides some squadrons for the imperial escort, is the Imperial Guard, which is composed of three divisions of infantry, two of cavalry, one of artillery, —— battalions of tirailleurs, and a corps of *élite* troops. The infantry divisions have each two brigades of two regiments of two battalions, with a battalion of tirailleurs. The cavalry divisions have each three brigades of two regiments of five squad-

rons, of which four are active and one at the depot. In time of war six squadrons are created. Each squadron has four platoons, each of twelve files. The artillery division contains a brigade of horse, three of foot, and one of park. The horse brigade has five batteries, and each foot brigade three; each battery has eight pieces. The total number of pieces, therefore, is one hundred and twelve. To the guard are attached various light troops, engineer parties, &c.

Next comes a corps of grenadiers of three divisions, a division of cavalry, and one of artillery, with eighty-eight pieces. There are then six *corps d'armée* of the line, organized in a manner similar to the guards and grenadiers. The infantry regiments have three active battalions and one in reserve; the latter is detached, and belongs to the Army of the Reserve. The organization of the different corps is of the most regular character. Thus, the first corps comprises the first, second, and third divisions of infantry, the first of cavalry, and the first of artillery. The first division of infantry comprises the first, second, third, and fourth regiments, with the first battalion of tirailleurs. The second division comprises the fifth, sixth, seventh, and eighth regiments, &c. This order is continued throughout the whole organization of the army. The regiments of the line are seventy-two in number. The battalions number five hundred and fifty men on the peace-footing, eight hundred on the half-footing of war, and one thousand on the full war-footing. The number of cavalry regiments is forty-two. The squadrons number one hundred and sixty troopers on the peace-footing, and two hundred on the war-footing.

Besides the active army there are four special corps,—in Caucasus, Finland, Orenburg, and Siberia,—each equal to a *corps d'armée.*

The irregular troops consist of one hundred and forty-six regiments of Cossacks, each eight hundred strong. They form a sort of territorial militia; but at least half of them can be mobilized for a defensive war, and one-third for an offensive one.

The "effective" of all the troops above named is about five hundred thousand men, on the peace-footing, of whom seventy thousand are cavalry.

Mention has been made of the reserve battalions. They are organized into divisions—one for the guard and one for the grenadiers—in time of war, and always one for each *corps d'armée.* In time of war it is expected to raise each battalion of the reserve into three, thus creating a new army. The Army of the Reserve is commanded by a general-in-chief, residing at Moscow. There is also a large body of sedentary troops, performing police and garrison duty.

The duration of service is fifteen years, twelve in the ranks

and three in the reserves. About two hundred and sixty thousand men are constantly absent on indefinite furlough, who can at any time be called into the ranks.

The abolition of serfdom has created an entire change in the system of recruiting. Formerly the proprietors designated the men; now they are selected by the communes. This will tend to improve greatly the character of the army.

Great attention is given to exercising the soldiers in tactical manœuvres, and more extensive provision is made for the education of officers than in any other country. The military schools are resorted to in great numbers by the youth of the nobility, and a great proportion of them subsequently continue in the military service.

Of the Russian Navy we have not such full and accurate information; but it is well known that a vast force is being accumulated. The chief harbors may be considered impregnable to an attack by sea on account of their fortifications, and the Government is constantly building or purchasing vessels with all the improvements introduced into naval warfare. The Russian Empire is as nearly invulnerable as human ingenuity can render any nation; and the immense forces which it can throw, both by sea and by land, outside of its borders render the other Powers of Europe suspicious, jealous, and fearful. The design of opening a route for the naval force and commerce of the empire through the Dardanelles is by no means relinquished, notwithstanding the temporary defeat suffered in the Crimean War. An outlet into the Mediterranean is a natural necessity, resulting from the geographical position of Russia. The determination to obtain it is traditional; only a favorable opportunity to seek it now holds that determination in abeyance. Such an opportunity would be afforded by any struggle between the United States on the one side and England and France on the other. Should such a struggle arise out of the Mexican complication,—which is so palpable an insult to the avowed policy of this country,—or from any other cause, a convulsion would probably ensue which would consign the old capital of the Eastern Empire—Constantinople—to the possession of new masters.

EXPLOSIVE SUBSTITUTES FOR GUNPOWDER.

THERE has never been a period since the discovery of gunpowder, and its application to ordnance and artillery, when nations, anxious to maintain their status and integrity, could less afford to be inattentive to the improvement of their military resources than the present. Every civilized country is laboring unceasingly, by invention, experiment, and practice, to improve and extend the ranges and effectiveness of their artillery and small-arms; and, if we may judge from the number of patents contained in the recent Reports of the Patent Office relating to improvements in projectiles and projectile weapons, a legion of inventive minds bears witness that Americans have not been backward in the race for improvement and superiority.

Imperilled as the nation is now, every military improvement and experiment must be regarded as a step towards placing the country in such a condition as to meet the enemies of constitutional liberty, both at home and abroad, with a consciousness of superior power; and, if the philanthropist will allow that wars have become less deadly, less destructive, and less numerous since the discovery of gunpowder and its application to fire-arms, than when battles were fought by numerous hosts in hand-to-hand conflict, the consideration ought to reconcile it to any one of right mind that the study of the science of war, and of written information on the subject, is neither so unnecessary nor repulsive as many estimable persons are disposed to consider them to be.

While improvements in artillery, small-arms, and projectiles have been carefully studied and successfully adopted, the material which, in connection with them, by its chemical decomposition produces a gradual, progressive, high propelling force, notwithstanding the advance of science and the wonderful progress of modern chemistry, has remained for centuries without a rival substance having been discovered which possesses all its advantages, nor have the three constituents which have entered into its composition from the earliest times ever been superseded by others. Nevertheless, efforts have not been wanting to discover new ones; and, in the hope that some of the intellects engaged upon the perfection of arms or projectiles may be led to attempt further improvements in the propelling agent, a *résumé* of the substitutes heretofore proposed is herewith presented.

The laborious processes followed in manufacturing and refining nitrate of potash, the monopoly governing the supply of sulphur in the East Indies and Sicily, and the want of uniformity in the qualities of charcoal, resulting from its mode of

preparation, have reduced the operations of all experimentalists to a question of economy, or to the hope of gaining a superior propulsive force by other agents less liable to variation and more easy of access. As nitrogen forms an important element in almost all explosive compounds, and as the *nitrates* form the principal store from which this substance is by elimination made to exhibit its nascent properties, the alkaline combinations of ammonia and soda with nitric acid were naturally chosen to replace nitre in gunpowder.

Powder made with nitrate of soda in the place of nitrate of potash, using charcoal and sulphur in the usual proportions, was found to inflame with difficulty; its detonation was weaker, and its projectile force proved to be far below that possessed by ordinary gunpowder; while the salt in question, from the absorption of moisture contained in the air, undergoes partial liquefaction, and therefore the powder made with it cannot be preserved. The attempt to substitute nitrate of ammonia proved even more objectionable. Powder thus prepared was found to inflame very slowly, to liquefy without detonating, and so destitute of projectile force that six ounces failed to discharge a six-pound shot from an eprouvette mortar; while the absorption of atmospheric moisture affected it to a far greater injurious degree than in the case where nitrate of soda was used.

Two distinct efforts have been made to introduce to the notice of the public an explosive substance, under the name of *white gunpowder*, by processes and materials essentially different from each other. Following the discovery of chlorate of potash by BERTHOLLET, in 1785, a mixture of seventy-five parts of this salt with ten of sulphur and fifteen of white sugar was found to produce a species of powder highly explosive, and possessing great projectile force. The arrangements for manufacturing it on a large scale in France were brought to an unfortunate termination, in 1788, by the explosion of the buildings, accompanied by loss of life, in the attempt to granulate the materials. A modification of this preparation by AUGENDRE, who proposed a mixture of fifty parts of chlorate of potash, twenty-five of ferro-cyanide of potassium, and twenty-five of white sugar, produced a still more explosive and dangerous compound. It ignites readily, explodes violently under a blow from a hammer, and often by friction: so that it must be handled with the greatest caution.

Under the direction of the "Imperial Administration of Powder and Saltpetre in France," various experiments with this mixture in different proportions proved its projectile force to be more than double that of gunpowder; but it was soon found that fire-arms of the common standard would not sustain, without danger of bursting, the violence of the explosion, even with a small charge; and, when the arms were made stronger,

the oxidation and corrosive action resulting from the products of the combustion upon the metal soon rendered them useless. The attempt to employ the mixture for charging percussion-caps also proved a failure, from the cause last mentioned, and it was finally abandoned.

The extraordinary experiments of BRACONNOT, in 1833, upon the action of nitric acid on liquorice, starch, sugar, and other organic bodies analogous in composition, by which these inoffensive substances were transmuted into others possessing a remarkable degree of inflammability, prepared the way for numerous experimentalists to announce that a substitute possessing many, and in some respects superior, advantages over gunpowder, was still within the province of possibilities. The invention by Captain SCHMIDT, of the Prussian army, of a species of *white gunpowder* obtained from starch, has been recently imitated and improved by Major VON UCHATIUS, of the Austrian Artillery; and the experiments of the latter at Vienna are said to leave little doubt as to its general adoption in the Austrian army. How far this latter declaration may be relied on is perhaps of less importance to us than the fact that starch may be rendered highly explosive, and is found to possess a far greater projectile force than any gunpowder in ordinary use, by a process at once simple and easy of demonstration, the details of which are supplied from a description by the Austrian major.

One part by weight of dry potato starch is to be dissolved in eight parts of strong fuming nitric acid, contained in a glass flask, adding the starch little at a time, and shaking the vessel to avoid an evolution of heat and the formation of oxalic acid. The thick syrup solution of starch thus obtained is next poured with a thread-like stream into a glass vessel containing sixteen parts of strong sulphuric acid, stirring briskly with a glass rod until the whole presents the consistency of pulp. After the expiration of twelve hours, it is mixed with eight times its own volume of water, which precipitates the starch as a fine white powder. Pouring off the liquid, the residuum is washed and decanted with water until the latter exhibits no acid action on litmus-paper. The starch powder is then boiled in a strong solution of carbonate of soda for half an hour, then washed repeatedly with water, and dried at the ordinary temperature. Granulation is effected after moistening with a mixture of alcohol and ether, caking, and sifting in the usual way.

The powder thus obtained presents a yellowish-white color, and is insoluble in water. It ignites rapidly when touched with a lighted coal, explodes loudly under a blow from a hammer on an anvil, and remains unaffected by dampness when exposed to its influence. From experiments made with small-arms and with the eprouvette mortar, a single charge required three and a

half times, by weight, more gunpowder to produce the same effects, while the residue left by its combustion, and the action of the gases evolved upon the weapons, were not found to be appreciable.

The startling invention by SCHÖNBEIN, in 1846, of a process which converted cotton into a new compound possessing highly explosive properties, more generally known as *gun-cotton*, awakened a lively interest among the seekers after the long-courted substitute for gunpowder. In Germany, France, England, Austria, and in the United States, experiments were immediately instituted to ascertain its adaptability to military purposes. In France, a special commission of inquiry was appointed, which for a period of six years pursued its investigations, manufacturing no less than five tons of gun-cotton, and applying it to the varied purposes of warfare: so that, apparently, no point connected with its proposed application seemed to have been left untouched.

In every country so many serious difficulties were found to exist against its adoption that, gradually, the efforts were relaxed, and finally abandoned, in all save Austria. Baron W. VON LENK, then a captain of Austrian artillery, applied himself to the removal of the obstacles which it presented, and to perfecting its method of manufacture, until success has so far crowned his attempts as to present the spectacle to the world at this time of *thirty-six* batteries of rifled artillery in the Austrian service fully equipped with gun-cotton ammunition.

At a recent meeting of the British Association at Cambridge, a committee appointed for the purpose laid before the meeting an elaborate report of the progress of the improvements made in Austria, to which additional interest was imparted by the presence of General VON LENK, under the permission of the Austrian Government, and fully authorized to furnish drawings and samples of his own gun-cotton, manufactured at the imperial factory at Hirtenberg. The specimens submitted were found to differ from gun-cotton as ordinarily made by their complete conversion into one uniform chemical compound, invariable in composition, and termed *Tri-nitro-cellulose*.

It has long been known that gun-cotton is prepared by the immersion of cotton fibre in a mixture of nitric and sulphuric acids, or in a mixture of powdered nitrate of potash and sulphuric acid; and to those acquainted with the details of the manipulation, and their want of uniformity, it is not a surprising matter to find a wide diversity in its chemical composition and resulting properties. This diversity arises from a variation in the strength of the acids employed, from the manner of mingling the acids, or the temperature the mixture attains, from the duration of the time of immersion, and from the more or less imperfect removal of the acids by repeated

washings in water. As each one of these causes possesses a wide range in diversity, a more or less imperfect transmutation of the elements of water and nitrogenization of the fibre must of necessity have resulted in as many varieties of gun-cotton as there have been attempts to make it.

To locate each variable cause of diversity at a proper fixed point, and to combine all the causes thus fixed in the preparation of gun-cotton, can alone insure uniformity in the resulting product. Every maker of gun-cotton for photographic purposes has encountered these difficulties; and it is only recently that they have been successfully overcome in that branch of the useful arts. The pertinacity and assiduity with which photographers have pursued their researches to find a variety of gun-cotton adapted to their specialty, has been followed by VON LENK, until the coveted substitute has finally been discovered by him, and proven to be admirably adapted to the purpose so constantly kept in view.

Knowing, as he did, the extent and results of the experiments in France, General VON LENK has displayed no inconsiderable degree of confidence in his ability to bring his attempts to a successful issue; and our regard for his efforts is further heightened by his success in devising rifled guns equally adapted to the use of gunpowder and the new agent. These guns, which now compose entire field-batteries in Austria, use the elongated projectile, the surface of which exhibits projecting ridges covered with malleable metal, which "take the grooves," annulling windage, and insuring the rotation of the shot without injury to the bore. Experiments on a large scale have been conducted by the batteries attached to the Second Regiment of Austrian Artillery, near Wiener-Neustadt, in which one-half of the guns were charged with gunpowder, and the other with gun-cotton. The results obtained have satisfied the advocates of the latter that the time is not far distant when the supremacy of cotton will be claimed on other than commercial grounds.

General VON LENK has materially added to our first knowledge in the specialties concerning the preparation of gun-cotton. Thus: he causes the cotton to be thoroughly cleansed at the outset, and, using the strongest acids attainable, he completely saturates the fibre in the mixed acids; and then, to insure a perfect conversion, the cotton is steeped in a fresh mixture of acids for a period of forty-eight hours. In place of washing until the water exhibits no action upon vegetable blue, he subjects the cotton to a running stream of water for six or eight weeks, and finally immerses it in a solution of silicate of potash before drying. The agency of the latter is by no means demonstrated; but it is alleged that it retards the rapidity of com bustion and modifies its bursting effect.

The Hirtenberg gun-cotton cannot be distinguished at sight

from ordinary cotton, and even under the microscope no difference in the appearance of the fibres is discernible. Its filaments are harsh to the touch, and crepitate when pressed between the two hands. It is unalterable in water, however long immersed, recovering its properties when dried, and is without odor or taste. A portion held between the thumb and finger, and drawn through the dry, closed hand, becomes highly electric, readily attracting and repelling light substances. It explodes at a temperature of 377° F., and, under a blow from a hammer on an anvil, scattering, without igniting, the portions not struck. If a quantity be placed on a small heap of gunpowder, it may be exploded without igniting the latter, or even in the palm of the hand without injury to the skin. A roll, grasped by one end, may be exploded without igniting the portion held in the hand. Exposed to a moist atmosphere, it is not permanently impaired, as is the case with gunpowder. Placed in a bell-glass over water, it absorbed only two and a half per cent. of moisture in forty-eight hours, and this, by subsequent exposure for a few minutes to the air, was dispelled, and the specimen recovered all its original properties. It does not dissolve in ether, or alcohol, or in a mixture of the two substances named, and is, therefore, useless for the preparation of collodion.

While the properties thus enumerated were to a great extent common to the early varieties of gun-cotton, *uniformity* among them seemed to many experimentalists so impracticable as to establish at the outset a belief that the difficulties presented could not be overcome. It is not a little remarkable that whatever degree of uniformity was insured in the proportions of gun-cotton, made in our first experiments, it was found to be confined to those which it was most desirable to avoid. Among these was the evolution of gases arising from its combustion, which were innocuous to respiration and corrosive in their action upon the metal of the arms wherein it was employed, and the self-decomposition which the cotton underwent in time, despite all the efforts made to prevent it.

The new Hirtenberg gun-cotton has been subjected to a careful analysis by Lieutenant Von Karolyi, who, after an explosion by an electric wire, in an exhausted ten-inch shell (under circumstances analogous to those which attend its explosion in fire-arms), collected the products, and they were found to consist of—

	By volume.	By weight.
Carbonic oxide	28.95	29.97
Carbonic acid	20.82	33.86
Marsh gas	7.24	4.28
Hydrogen	3.16	0.24
Nitrogen	12.67	13.16
Carbon	1.82	1.62
Aqueous vapor	25.34	16.87
	100.00	100.00

A glance at these constituents will show that, while many of

them are combustible, as in the case of the combustion of gunpowder, they are not deleterious under the circumstances which attend their evolution, and they are further characterized by the absence of the vapors of nitrous and hyponitric acids, of a residual solid deposit, and of a cloud of smoke to impede the sight of a soldier or betray his position. After forty rounds of Hirtenberg cotton were fired from a steel rifle barrel, the bore of the latter was left bright and polished as the surface of a mirror.

The self-decomposing influences to which the early varieties of gun-cotton were subject are not found to exist in the Hirtenberg product. Specimens made in the years 1856, 1860, and 1862 have been subjected to a careful chemical analysis, and they presented no greater diversity than is found to arise whenever the same material is submitted to a quantitative analysis. A parcel of General Lenk's cotton, after lying for weeks in a pond, was deposited a long time in a running stream of water, and then exposed for a month to the air, subject to all the various influences of dew, rain, and sun, night and day, without its original explosive qualities being in the least degree impaired.

The same is true for specimens which have been stored for twelve years in the magazines in Austria; while the Austrians themselves recognize to-day in gun-cotton a substitute for gunpowder, possessing many great advantages which the latter, from its nature, can never possess.

I cannot close this paper without expressing my abiding conviction that the coveted substitute for gunpowder will yet be found in gun-cotton. If the same spirit for improvement and determination to adapt it to war-purposes be followed which photographers have displayed in forcing it to supply to them a vehicle for the production of sun-pictures, gunpowder will yet bear the same relation to gun-cotton that the old metallic daguerreotype now holds in relation to the "cartes de visite" of the present day. For half a century the application of steam to locomotion was impeded by unbelievers; for years phosphorus was pursued to supplant the tinder-box in the production of light; for years the sewing-machine was resisted as a visionary undertaking; and not until recently has the supremacy of the percussion lock over the old flint been universally acknowledged.

It is true that some of these improvements are mechanical, and tangible things which involve but little familiarity with the origin and composition of the materials; but let the same number of minds and hands operate on gun-cotton as have been engaged in bringing to a successful termination the experiments on coal oil and coal-oil lamps, or manufacturing candles from lard, both of which substances have existed since the days of Adam, and the utility of which, for illumination, dates back scarce twenty years, and further attempts to improve gunpowder or furnish a substitute will be regarded as needless an undertaking as an tempt would now be to improve a friction match.

A METHOD OF DETERMINING A PLANE OF DEFILEMENT.

BY LIEUTENANT JAMES R. WILLETT,

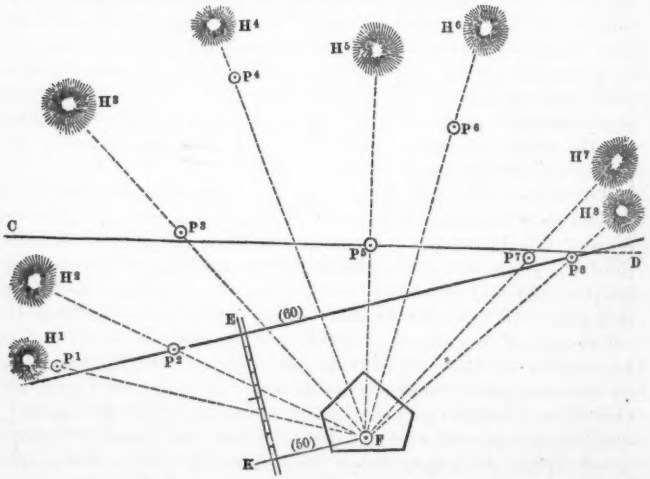
(38th Regiment, Illinois Infantry, Engineer Department, Nashville, Tennessee).

THE following method was the result of necessity; and there is nothing contained in the following article but what I have applied in practice. It is believed to be original, and is certainly so, as far as my knowledge extends.

Having found this method to give accurate and in every way satisfactory results, and easy in its practical application, it is now submitted, in the hope that it may prove useful to officers engaged on engineering duty.

Let it be desired to construct a fortification at a given point F, and to defile it from the hills in front, H^1, H^2, H^3, H^4, H^5, H^6, H^7, and H^8.

Find the courses to the hills, and the vertical angles to their summits; plat the courses, and on them mark the points P^1, P^2, P^3, P^4, P^5, P^6, P^7, and P^8, where the lines from the point F to the several summits would pierce a horizontal plane taken at any assumed distance above the point F; then the points P^1, P^2, P^3, P^4, P^5, P^6, P^7, and P^8 will all be of the same elevation, they being situated in the same horizontal plane.



The plane passing through any two of these points P^1, P^2, &c., and also the point F, will be the rampant plane of those points and the point F; and, further, the plane that passes through any

two points and the point F, and which also passes above all of the other points, will not only be the rampant plane for the points it passes through, but it will be the plane sought for.

To find this plane, take the point of intersection (P^5) that is at the least distance from the point F, draw the perpendicular C D to the line F H^5 at the point P^5; this may be taken as a horizontal of the plane which passes through the points F and P^5. Now, if all the other points P^1, P^2, &c., fall upon the opposite side of the line C D to the point F, then the line C D and the point F determine the plane sought for, since the points P^1, P^2, &c. are all of the same height, and the plane determined is ascending from F to P^5, where (at P^5) it is the same height as all the points P^1, P^2, &c., it must necessarily pass above all the other points which are at a greater distance from F along the line of greatest declivity F H^5.

If, after having drawn the line C D as above stated, any of the points should lie on the same side of the line C D that the point F does, then draw a line P^2 P^8 through any two of the points P^2 and P^8, which will leave all the rest of the points on the opposite side of the line P^2 P^8 to the point F. This can be done by inspection. The line P^2 P^8 may be taken as the horizontal of a plane which passes through the points P^2, P^8, and F; and this plane will evidently pass above all the other points, and be the rampant plane sought for. It may be observed that the perpendicular from the point F to the line P^2 P^8 will always strike the line P^2 P^8 between the points P^2 and P^8 which determine the line; and also that if each of the points P^1, P^2, &c. be connected by a line with each and every one of the others, then the perpendicular distance from F to the line P^2 P^8 will always be less than the shortest line that can be drawn from the point F to any of the other connecting lines, not prolonged, but between the points which they connect.

The direction of the line of greatest declivity will be found by drawing a perpendicular to the horizontal of the desired plane. To find its scale, draw a line from the point F parallel to the horizontal (*i.e.* perpendicular to the line of greatest declivity), and find where it intersects the line of greatest declivity; this point will have the same reference as the point F. Then the references of two points of the line of greatest declivity will be known,—viz.: the reference of the horizontal P^2 P^8, which lies in the plane first assumed and also in the rampant plane, and the other, having the same reference as the point F; then, by dividing the line of greatest declivity into the number of parts which equals the differences of the references of these two points, we will have the scale of the line of greatest declivity.

The plane of defilement may be six (or any desired number of) feet above the rampant plane, or it may be obtained in the first

instance by taking the vertical angles, not of the summits of the hills, but of the desired distance above their summits.

EXAMPLE.

It is desired to construct a fortification at a point F, the height of which is fifty feet above the plane of reference, and to defile it from eight hills H^1, H^2, H^3, H^4, H^5, H^6, H^7, and H^8 in its front, which have the following bearings, and the lines from the point F to the visible summits of which make the following vertical angles with a horizontal plane:—

Bearings	P^1 N. 75° W.	Vertical Angles	$1\frac{1}{2}°$
"	P^2 N. 63° W.	"	$2\frac{1}{4}°$
"	P^3 N. 40° W.	"	$1\frac{3}{4}°$
"	P^4 N. 18° W.	"	$1\frac{1}{2}°$
"	P^5 N. 4° E.	"	$2\frac{1}{2}°$
"	P^6 N. 18° E.	"	$1\frac{1}{2}°$
"	P^7 N. 45° E.	"	2°
"	P^8 N. 51° E.	"	$1\frac{3}{4}°$

Plat the courses; assume a horizontal plane, say ten feet above the point F; then the reference of the assumed plane above the plane of reference will be (60). Find the horizontal distances from the point F to the points where the lines from the point F to the several summits pierce the horizontal plane of (60); which will be as follows:—

P^1	382 feet	P^5	229 feet
P^2	254 "	P^6	382 "
P^3	327 "	P^7	286 "
P^4	458 "	P^8	327 "

It is evident that the plane which passes through the line P^2 P^8 and the point F passes above all the other points, and, further, that the perpendicular from F to the line P^2 P^8 is shorter than any line that can be drawn from the point F to any other connecting line between the points it connects.

To find the line of greatest declivity and its scale, draw a line E K perpendicular to the line P^2 P^8; this gives its direction. To find the scale, draw a line F K from F parallel to P^2 P^8, until it intersects the line of greatest declivity at K. Now, we know that the height of the line P^2 P^8 is (60), and that of the point F, and, therefore, of the line F K, is (50). By dividing the distance E K into ten parts we will have the scale of declivity in feet, and these may be subdivided.

After having determined the plane of defilement on the plan, it may be verified on the ground, as follows:—

From the plan, ascertain the references of angles of the interior crest; on the ground put up poles at these angles, so that their tops will reach up to the interior crest, *i.e.* to the plane of defilement; then, if necessary, bank up around one of the poles, or have a platform constructed to reach within four feet of the top of the pole; take an engineer's spirit-level, and, after having put it in perfect adjustment, set it upon the bank as close as

possible to the pole, so that the telescope will be of the same height as the top of the pole, which we will call the first pole; then direct the telescope towards a second pole, and, by means of one set of levelling screws, make the horizontal cross-hair strike the top of this pole; then turn the telescope between 60° and 90°, and direct it towards a third pole, and, by means of the other set of levelling screws, make the horizontal cross-hair strike the top of this pole; then again direct the telescope towards the second pole, and see if the horizontal cross-hair strikes the top of this pole, if not, cause it to do so in the manner stated; by repeating these operations, the instrument can be arranged so that the cross-hair will strike the tops of both poles by simply revolving the telescope. The telescope, being of the same height as the top of the pole at which it is set up, will be in the plane of defilement, and, as its line of collimation on revolving the telescope strikes the tops of the other poles (*i.e.* two other points of the plane of defilement), it follows, on the principle that three points determine a plane, that the telescope will revolve in the plane of defilement.

Revolve the telescope, and observe if the horizontal cross-hair will pass above all the hills which the fortification is to be defiled from, and at the proper distance above the two hills which determine this plane: if it does, then the plane has been correctly determined.

Observe if the horizontal cross-hair will strike the tops of the poles set up at all the angles of the interior crest: if it does, then it is shown that their tops are in the plane of defilement, and, therefore, of the proper height.

NAVAL STAFF RANK.*

In the course of its existence, every nation has need either to resist aggression from other nations, or to coerce them to respect those laws which are common to all peoples. To achieve such purpose, it is often necessary to destroy the lives and property of persons who have done nothing individually which makes it just that they should forfeit either. Neither justice nor humanity allows any citizen or every citizen, on his own resolve, to slay individuals and escape trial for murder on a plea that he whom he slew was an enemy of his country.

The horrid work of killing men without holding the slayers responsible can be done on the authority of a nation alone.

* This article, from a distinguished naval correspondent, opens a question which is worthy of discussion. In opening our pages to its consideration we do not design to commit ourselves to a decision upon it.—Ed.

This authority is exerted through the agency of an instrument so contrived that no one of the thousands who compose it shall have his hands or his conscience stained with blood because he himself has slain, or has assisted others to slay, the enemies of his country in open war. The instrument employed by a nation to destroy the lives and property of its enemies under certain circumstances, is termed a military establishment. This machine is a complicated engine, which derives its motive power from a compound of anthropal brain-and-muscle force; but no one of the separate organisms of which it is composed is in any degree responsible for the results of their joint action. The nation, and not the engine, is alone accountable.

A national military establishment is divided into two distinct parts. One is organized and equipped to do battle on land, and is known as the army; and the other, called the navy, is that part of the military establishment of a nation which is designed to combat its foes upon the sea, and is organized and equipped to serve on board of ships.

It has been asked whether the navy consists of the ships, or of the officers and privates who serve on board of them? In answer to this question, it is asked whether the cavalry is composed of the horses, or of the officers and privates who ride them?

A military establishment, to be efficient in its action, requires a harmonious co-operation of several distinct parts, simply because no man is qualified to do all things. In connection with special functions necessary to the perfection of the machine, those who compose it have been arranged in two principal divisions, or classes. Those whose prominent function is in battle to manipulate deadly weapons, blank as well as firearms, constitute a class which, both in the army and navy, is named "the line," possibly because it is composed of an unbroken series of steps or grades by which the individual may ascend successively from bottom to top,—from cadet to general, from midshipman to admiral. But those whose duty is to manipulate weapons would be unable to perform that duty without assistance of various kinds. They need to be fed, clothed, paid, to be furnished with lodging, to have forts, barracks, or roads constructed for their use, in order to enable them to do their work. The class which embraces all those functions which are essential to assist or support the "line," and make it an available part of the machine, is termed "the staff," which is composed of bodies or corps, sometimes termed departments, each of which is subdivided into grades. The term "staff" appropriately designates those whose prominent function is to support the line.

A battle is not fought by the line exclusively; the staff always participates: the success of the former is often contingent upon the efficient manner in which the latter performs its duties. The

line and staff are mutually dependent; they are not, relatively to each other, primary and secondary classes; neither can exist separately and be efficient in action. A battle is lost or won by the joint action of both classes, which as an aggregate constitute the military machine.

The grades of the line of an army, and the grades of the line of a navy, are analogous, but are designated by different appelatives. The grade of admiral in the navy is equivalent to the grade of general in the army; vice-admiral, to lieutenant-general; rear-admiral, to major-general; commodore, to brigadier-general; captain, to colonel; commander, to lieutenant-colonel; lieutenant-commander, to major; lieutenant, to captain; master, to first lieutenant; ensign, to second lieutenant; and midshipman, to cadet.

Both in the army and navy, general command belongs exclusively to the line; but the staff has special command, which is limited generally to each staff department or corps.

The navy is a military organization, and, like the army, is composed of military men.

What are the qualities which characterize military men and distinguish them from civilians or citizens generally? What is it that military men do which citizens do not? In their military capacity, men do almost every thing which they do in private life; and men in private life do almost every thing which military men do, even to the firing of guns and pistols and the wearing and using of swords. Military men, in the line of their duties, as often wield shovel and pick, hammer and file, saw and plane, as sword or gun: they perform the functions of almost every trade wrought at for human comfort. It is not the fashion or form of his garments, nor the nature of his acts, nor what he does or says, which bestows military character on a man. Then, what is the definition of the term "military man"?

The military establishment of a nation, which is always subordinate to its civil authority, is governed within its organization, not by the civil statutes of the land, but by a special code of laws devised for its observance and adapted to the conditions and occasions for which it was created. This military code differs widely from the civil and common law of the land.

A military man may be defined to be, any man who is amenable to military law, and subject to trial before military tribunals on charges of official transgression. Citizens, as a general rule, are not answerable before courts-martial.

A comparison of an armed merchant-steamship with a public ship-of-war affords an illustration of this definition as applicable to the naval service. The private ship is navigated, sails are spread and furled, decks are washed, the engine is kept in action when needed, and, when occasion requires, the guns are

loaded and fired. Although these acts are in all respects the analogues of those performed on board the public ship, the actors in the one instance are not military men, while they are in the other. On board the public ship the officers and privates are military men, because they are amenable to military law; but on board the private ship they are amenable to the civil laws, administered by marine or admiralty courts.

The commands issued on board the public ship are military commands, because they can be enforced through the processes of military law; but the same commands issued on board the merchantman are not military, but civil.

Now, if this definition is correct, all persons engaged in the naval service, whether classed in the line or in the staff, are military men, because all are alike amenable to military law, without regard to vocation. There are, however, some officers, whose functions are exclusively naval, who belong neither to the line nor to the staff, and are properly termed civil officers.

The Secretary of the Navy, and all those who assist in the administration of naval affairs in the Navy Department, including the chiefs of bureaus, navy agents, naval storekeepers, inspectors of timber, certain clerks in navy-yards, and some others, are civil officers of the navy. They are not amenable to military law.

As stated above, the line of the navy consists of several grades; but the administration of military authority does not allow an absolute equality among the officers of the same grade. It is necessary that the junior captain, for example, shall be subordinate to his senior. In technical language, no two captains are of the same rank, but one ranks the other according to the date of his commission; the senior has precedence and right to command all captains who are junior to himself, as well as all officers of inferior grades when associated with him on duty by the order of a common superior. The terms "rank" and "grade," although very frequently used synonymously, have distinct meanings.

From the time of the formation of the navy of the United States, the principle just alluded to has been scrupulously observed among line officers, even when they were pleased to designate themselves "sea-officers," or "officers proper" of the navy, and termed those of the staff "civil officers" and "non-combatants." In those early days, nothing was considered of greater individual importance than to assert and defend all the privileges of their rank; officers of the line were heard to declare—with emphatic additions, sometimes—that they would rather die than yield their rank: they were, however, very young men.

But, while they entertained some vague notion that the word "rank" really meant something more than relative position in a grade, and this undefined something imparted to them an

essential quality of pre-eminence which could not suffer comparison with any not of the line without risk of pollution, they would not perceive that the "relative position," or rank of staff officers in military organization, is to them very essential, although not estimated quite so extravagantly as to be worth preserving at the hazard of life.

Nearly half a century ago (1816), medical officers of the navy asked to have a definite rank assigned to them. Their petition to Congress was endorsed by the Secretary of the Navy, the navy commissioners, and nine captains; and subsequently a memorial in its favor was signed by sixteen of the thirty captains then in the navy.* But, either because their memorial was received with indifference or met with opposition,—of which there is no record,—the petition of the medical officers and their friends was not successful.

It may be inferred from a record in the "American State Papers" (volume for naval affairs) that some few fancied themselves to be so hedged round by rank that the perpetration of even flagrant acts of tyranny might pass unheeded. One who had won a battle and a famous place in the annals of our navy so far forgot what was due to his subordinates that in his own cabin he dealt a blow to a captain of marines. Briareus himself could scarcely have struck more persons at once: the officers of the squadron resented the blow, and forty-one of them, namely, twenty-one lieutenants and one master of the line, ten officers of the marine corps, six surgeons, and three paymasters of the staff,—of the whole number eight are still living,—addressed a memorial to the Senate of the United States, in which they say, "The undersigned have now no guarantee for the safety of their persons, but the use of those arms which the laws of their country have placed in their hands, and that personal strength with which nature has blessed them," &c. &c.

In those days, medical officers had no defined position in the

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* The signers were John Rodgers, Stephen Decatur, Isaac Hull, David Porter, Samuel Evans, Joseph Bainbridge, S. Angus, James Renshaw, Geo. W. Rogers, James T. Leonard, Edward Trenchard, James Jones, L. Warrington, Wm. Bainbridge, D. Deacon, Alexander S. Wadsworth.

Those gentlemen said, among other things, "We consider the medical department of such great importance to the navy of our country, that no reasonable measures ought to be omitted which could have a tendency to retain in the service the professional ability of those gentlemen who, by their experience, knowledge, zeal, and humanity, have procured the esteem and confidence of those with whom they have been associated; and we also beg leave to express our belief that no reasonable inducements would be objected to by Congress to procure for those who are engaged in a perilous service, and who are constantly exposed to the diseases of all climates, the best medical aid which the country affords. To effect this, it must be obvious that the rank and pecuniary emolument ought to bear some proportion what to gentlemen of professional eminence would be entitled to in private life."

American State Papers,—Naval Affairs,—1816–17.

organization of the navy. No written law or regulation indicated whether they were above or below lieutenants or others; but practically they were considered to be below every grade of officers of the line. A notion prevailed widely, if not universally, in the service, that the line alone constituted the navy, and that the staff was a kind of necessary parasite, appointed and paid, not for their services to the nation, but for the convenience of "sea-officers." The then existing notions about the nature of naval organization were vague and less settled than they are now. Few officers admitted that the naval organization was military, a word which, it was imagined, belonged or related exclusively to soldiers. The terms "line" and "staff" were not in use to designate classes in the navy. An erroneous appreciation of their own importance in comparison with that of persons of other vocations led very many, especially the younger and least thoughtful "sea-officers," to imagine that a post-captain was worthy of more profound respect than any other man in the nation. Then midshipmen, and even young lieutenants, were so much awe-struck by the supposed grandeur of captains, that they avoided taking up quarters at the same hotel; and the writer has heard more than one, in recounting anecdotes of his early days in service, state that his sense of almost reverential respect was so great while a midshipman that he could not pass a post-captain in the street with perfect composure. In those days sailors wore queues and low, long-quartered pumps when on liberty ashore, and were more distinguished by a reckless prodigality than they are now.

There were intimate friendships existing between officers of the line and staff; but somehow the "sea-officers" seemed to believe that staff officers belonged to an inferior caste, and that it was condescendingly meritorious to treat them as friends. And when it happened, as it did sometimes, that medical officers claimed to be the equals of "sea-officers" on certain official occasions, they were resisted, on the ground that there was no regulation to sustain their pretension. Whenever line and staff officers were associated to examine a question jointly, as a board, the line officer, no matter what might be his grade or rank, claimed a right of precedence, and to command the staff officers, without considering either the official or natural age of the latter. Seniority was not regarded by "sea-officers" as an element of respectability in staff officers; but it was always jealously respected in the line. Even when medical and line officers were associated, as a "board of survey," to examine the condition of invalids, the line officers claimed to be the superiors and to direct the proceedings of the board. Little more than thirty years ago, an elderly and very respectable line officer of the highest grade expressed his opinion that a post-captain ought to preside when a board of surgeons was assembled to examine

candidates for admission or promotion in the medical corps, for the purpose, he said, of giving respectability to the proceedings!

During the thirty years which followed the first recorded application of the medical officers for a definite rank, their position remained uncertain, being always subject to the discretion, caprice, or disposition of the line officer placed over them in command. At last, in the year 1846, the Honorable George Bancroft, then Secretary of the Navy, heard their representations, and issued a general order, as follows:—

"Surgeons of the fleet, and surgeons of more than twelve years, will rank with commanders;
"Surgeons of less than twelve years, with lieutenants;
"Passed assistant surgeons, next after lieutenants;
"Assistant surgeons, not passed, next after masters;
"Commanding and executive officers, of whatever grade, when on duty, will take precedence over all medical officers.
"This order confers no authority to exercise military command, and no additional right to quarters.

GEORGE BANCROFT.

"NAVY DEPARTMENT, August 31, 1846."

The observance of this order was generally, though not universally, evaded or resisted, on various pretexts. The subject has been in controversy ever since the order was issued.

A new order was promulgated, bearing date March 13, 1863, as follows:—

"Assistant surgeons to rank with masters;
"Passed assistant surgeons to rank with lieutenants;
"Surgeons to rank with lieutenant-commanders for the first five years after promotion; after the first five years, with commanders; and after fifteen years from date of commission, with captains.
"Surgeon of the fleet to rank with captain."

Whether the rank given by this order is too much or too little, or whether it has been judiciously arranged, or what will be its effect in attracting to and retaining in the naval service well-educated and thoroughly efficient physicians and surgeons, are questions not now to be considered. Its effect upon the line, or some members of it, is to be briefly noticed.

It appears that some officers of the line—not a very considerable number of considerable men, it is supposed, but chiefly those soured already by being postponed in promotion or by being pronounced by their peers to be not qualified to be raised higher in the profession—addressed a memorial to the Secretary of the Navy, which was published at New York, October 17, 1863, in the "Army and Navy Journal," page 116, in which they ask that all the regulations and laws on the subject may be revoked or annulled, and that hereafter the assistant surgeon shall rise in nominal rank *pari passu*, as the ensign appointed on the same day advances from grade to grade in the line. The term ensign is the appellative recently employed to designate

the graduates of the Naval Academy, who have been known heretofore as passed midshipmen.

If this proposition be accepted, the effect will be to elevate the diploma of the Naval Academy above all other diplomas, whether scholastic or professional, or both: the Master of Arts from Harvard or Yale, bearing with him also the diploma of Doctor of Medicine from the University of Pennsylvania or the University of New York, will be required to meekly stand behind the graduate of the Naval Academy and follow him in his naval career. It may be doubted whether the trustees, professors, and alumni of those ancient seats of learning will silently acquiesce in this very indecorous pretension of an inferior and junior institution. Whether the alumni will be allured to the naval service by such an arrangement is well worth considering before it be finally established; for, aside from the consideration which the war gives it, the navy was never less attractive to cultivated men than it is at this moment, for reasons which it would be impolitic, as well as useless, to specify. There are now say four hundred ensigns and six hundred masters in the navy; but only thirty are graduates of the Academy: the others are brave, patriotic sea-faring men, whose native good sense has never been very much influenced by scholarly training, although sufficiently educated for all practical purposes of their vocation in the commercial marine. They render most valuable service in the navy. But there are among them some whose vanity has betrayed them into unreasonable exhibitions of the military authority which their appointments give over staff officers.

The memorialists above referred to declare that the regulation of March 13, 1863, is injurious and disparaging to them, for reasons some of which it is now proposed to examine.

They assume, first, that advancement in assimilated rank, in virtue of fixed periods of service, is equivalent to lineal promotion; and, second, that to permit assimilated promotion of staff officers to proceed more rapidly than actual promotion in the line, is unfair.

Technically, "promotion" implies advancement from a lower to a higher grade. The advancement in assimilated rank objected to, is without actual progress or change of grade; it is not promotion in the military sense of the word. On receiving his commission, a surgeon assimilatively ranks in the grade of lieutenant-commander; after the expiration of five years, in the grade of commander; and after the expiration of fifteen years, in the grade of captain in the line; but in fact he is not "promoted:" he always remains in the grade of surgeon, and is always in the staff. His advancement in assimilated rank through the merit flowing from fixed periods of service neither retards nor accelerates lineal promotion, which is contingent upon the occurrence of vacancies in the higher grades, arising either from

death, resignation, dismissal, or from augmentation of number, and is not limited to any period of service. In the past three years, lieutenants have been promoted through the grades of lieutenant-commander and commander to captain; and some who were commanders in 1860 are now, and have been for some time, rear-admirals. The war has occasioned rapid promotion in the line. But no surgeon or other staff officer has been so unreasonable as to complain, or urge this as a reason why advancement in assimilated rank should be *pari passu* with promotion in the line. No one has suggested that promotion from grade to grade in the staff corps ought to be regulated by the rate of lineal promotion. In this respect, at least, the line and staff are, and may be, independent of each other without detriment to either. It would be simply absurd to make promotion in the staff corps contingent upon promotion in the line; the reverse of the proposition would be no less unreasonable or absurd.

The memorialists declare that the scale of promotion given to staff officers "ignores not only length of service, but also its nature" in the line, and "must inevitably be fatal to that feeling of military pride" which, they assert, is "the sustaining principle of military organization" and "the vital element of military bodies."

"Pride," says Noah Webster, is "an unreasonable conceit of one's own superiority in talents, beauty, wealth, accomplishments, rank, or elevation in office, which manifests itself in lofty airs, distance, reserve, and often in contempt of others."

The pride of men who are amenable to military law may be denominated military pride.

If Webster's definition of the word be accepted, pride cannot be regarded either as "the sustaining principle of military organization," or as "the vital element of military bodies." On the contrary, it may be reasonably conjectured that the manifestation of "an unreasonable conceit of one's own superiority" by the members of a military organization will be injurious both to its harmony and efficiency, instead of being a "sustaining principle" or a vivifying element. If advancement in assimilated rank without reference to the length or nature of the services of line officers be really fatal to "an unreasonable conceit in one's own superiority," it may be continued without apprehension of bad consequences. A just appreciation of the position and authority of himself as well as of every other man, combined with proper self-respect, by every member of a military organization, will contribute more towards its harmony, brotherhood, and efficiency than pride or irrational conceptions of any kind.

The memorialists are pleased to designate officers of the staff as non-combatants. The epithet can be applied to them only in a spirit of disparagement, because there are no non-combatants in the navy.

All who participate in a combat are combatants. The commander who gallantly leads is no more a "real" combatant than those who gallantly follow him and obey his commands. The quartermaster at the cun,* the seaman at the wheel, the gunner in the magazine, the carpenter, the surgeon, the paymaster, the engineers at their quarters, participate in the combat as much as the captain, loader, and sponger of a gun. Each in his place is a combatant. Those of the staff are not *unreal* combatants. Without them, there would be no combat. On board of steamers, in battle, the presence of the engineers is indispensable; they are exposed to as great peril of life as any others. The engine is a special object of the enemy's shot.

The contest is not between the persons belonging to the hostile vessels: each ship strives to conquer its opponent. It is notorious that a broadside fairly delivered into the enemy between wind and water determines the issue of a battle. The Cumberland and Congress were not overcome by missiles hurled among the men working the batteries on the upper decks. "During two years of the Carolina blockade, the only commissioned officers killed were medical officers; and, in the action between the Minnesota and Merrimac, the only shell which came below the gun-deck tore open the berth-deck into the cockpit, and, by the concussion, knocked down one of the medical officers, wounding in its track more men than were wounded in all the action on the upper decks. It is not so much the officers and men who are the objects of an enemy's missiles as the vital parts of a ship." In a naval fight, the force exerted is the aggregate or common resultant of the exertions of individuals on board the vessel, each laboring in his peculiar vocation, and no one is exempt from danger, be his station where it may. Statesmen, in recognition of this truth, have enacted that all persons, whether of the line or of the staff, are entitled to prize-money. To admit men who can be properly denominated non-combatants to share prize-money, although they do not assist in winning the prize, would be manifestly unjust.

Those who peer into the future of worldly affairs fancy they perceive a period coming when the "line," as at present constituted, will not be needed in the navy.

Three hundred years ago, naval battles were fought by soldiers, aided by only a comparatively small number of rowers or sailors. John of Austria commanded the combined Christian forces against the Turks in the famous battle of Lepanto, which resulted in the destruction of the Turkish fleet, October 7, 1571.

In those days seamen were on board of ships used in war to navigate and conduct them; soldiers, in fact, constituted the "line," and manipulated the weapons. But in the course of time

* Cun, to control, command the helm.

the sailors perceived that by making themselves skilled in all that related to the use of artillery, they would bring themselves into favor, and soldiers would be no longer placed on board ships to win all the glory gained in battle on the sea. They learned to manage both the ships and their armaments, and, as a consequence, the number of soldiers on board dwindled down to a marine guard. The seamen became masters, and would have remained in supreme control had it not been for the application of steam to the propulsion of ships. As long as wind alone was the motive power, military seamen were indispensable to constitute the line. But now that such brains as those of Ericsson are busy in devising vessels which dispense with the motive agency of wind, or vessels with hollow iron masts and iron rigging, so arranged as not to require men to go aloft, either to furl or spread sails, naval vessels may come to be conducted exclusively by men skilled to manage steam engines and machinery. The steam engineers, like the sailors of old, have only to acquaint themselves with navigation and the use of ordnance to enable the nation to dispense with the present nautical line. If the gentlemen of the existing line desire to retain their vocation in the coming time, they must consent to fall somewhat from their supreme position, and, in addition to seamanship, learn the mysteries of running marine engines. They must acquiesce in the levelling up or levelling down which seems to be necessary to meet the demands of the progressive intelligence of the day. Those men with inventive brains are fast destroying, by their mechanical contrivances, the illusion in which some of the line seem to be wrapped, that it alone is the Alpha and Omega of the naval service, and therefore has a right to dictate to the Government the scale of rank to be given to staff officers in the navy. It is conjectured that the permanent supremacy of the line is in more danger from the inventive genius of physicists than from any degree of assimilated rank likely to be conferred upon staff officers in the naval service.

Let us hope that, in spite of differences of opinion, all will perceive that the value and respectability of the navy are not due to any one class or grade, but to the common result of their joint and harmonious efforts to serve our country, while conceding to every man what is just.

A BATTLE-HYMN.

GOD defend thee, land of nations!
  Mother of the brave and free;
E'en amid thy desolations,
  Stronger grows our love for thee.

They who wound thee, best of mothers,—
  They who seek thy life to take,—
Shall we deem them friends and brothers?
  Nay! we'll smite them for thy sake.

Be the sword of justice lifted,—
  Quick descend the righteous stroke,
Till the traitorous host be rifted,
  Broken its tyrannic yoke.

Comrades! be our motto ever,
  Faithful to our country's trust!
Though we give our lives, yet never
  Shall our mother kneel in dust.

By the love we bear that mother,
  By the duty children owe,
Faithfully by one another
  Stand we till we crush her foe.

Let the hail of bullets rattle,—
  Hostile weapons line the field;
In the day of freedom's battle
  God Almighty is our shield.

When the cloud of war is riven,
  Peace shall like a rainbow shine;
They who for the right have striven
  Coming ages shall enshrine.

MAY 7, 1864.

THE RAPIDS.

PER BELLUM AD PACEM.

ONWARD ever they pour, the wrestling, far-leaping rapids,
With the wild clash of an army, tossing its crests to the battle;
Dashing o'er storm-scathed rock, still on by the spray-covered headland;
Grappling the helpless spar in the whirling, merciless eddies;
Past yon islet of green, that whispereth "Stay" from the fir-tops;
Onward ever; and now, with a war-cry of maddening thunder,
Breaks the billowy legion over the rampart of granite.
Mighty it falls, then, soft as the voiceless, vanishing snow-flake,
Melts the vapory pile in the breast of the swallowing river,
Over it, smiling, hangs the face of the rainbow eternal,
And on the emerald floor look the cliffs in shadowy stillness.
Even so wrestles the Truth on the stormy tide of the Ages;
Then on the bosom of peace soft glide its passionless waters.

E. A. W.

LITERARY INTELLIGENCE

AND

NOTES ON NEW BOOKS.

From Mr. D. Van Nostrand, the enterprising and discriminating publisher of standard military books, we acknowledge the receipt of several new works of great excellence and timely value. Among these the most notable is a treatise on "Military Bridges," by Herman Haupt, Esq., who for a long time conducted the military bridge-building and the construction of military railroads, under a commission as brigadier-general. The present work is, therefore, rich with his experience, and is further valuable because he was well known before the war began as the author of a work on bridges, which was generally used by our constructors. General Haupt has given us in the pages before us a summary of all the new expedients, detailed instructions for building trestle and truss bridges, the manner of using blanket-boats (made by stretching India-rubber blankets over a frame), the modes of constructing, repairing, and destroying military railroads. He presents a clear statement of General Cullum's pontoons, and a view of the European progress in military bridges. Besides the three hundred and ten pages of the book, through which simple illustrations are spread, we have sixty-nine elaborate engraved diagrams at the end, which add greatly to the value of the work. In a word, this is a most thorough and complete exposition of an art which is required to overcome what must be considered as among the greatest practical difficulties of every campaign. The thanks of the army are eminently due to General Haupt. 8vo.

Mr. Van Nostrand has also issued, in a 12mo volume of one hundred and ninety-three pages, "A Treatise on Military Surveying," by Captain George H. Mendell, of the Corps of Engineers. This is a successful attempt to apply the ordinary principles of surveying to fields of war. It presents the theory and practice of the art, with a description, in detail, of the theodolite, sextant, pocket-sextant, plane-table, levels, and other surveying instruments.

The general principles of geodesy and of topography are laid down; models of plans are given; triangulation is explained. The modes of presenting inequalities by *hachures* and by horizontal curves are made clear. Specimen memoirs are given, and the use of protractors, scales, &c. illustrated by diagrams. There are also formulas for reference, and a table of natural sines, &c. Such a book, carried in the pocket of an officer charged with a careful, detailed reconnoissance, would be invaluable.

General William H. Morris, a graduate of West Point, and formerly an officer of the Second U. S. Infantry, has just issued, through the press of Mr. Van Nostrand, a little 16mo of one hundred and forty-six pages, containing "Field Tactics for Infantry," including instructions for the manœuvre of a battalion or brigade, with certain other evolutions, among which we find the review of an army corps. This little volume, which is in part tabulated after the plan of Le Loutrel, answers many practical questions not clearly explained in the authorized tactics. General Morris has been aided by the suggestions

of other distinguished generals of the Army of the Potomac; and his "Field Tactics" will be received as the recorded experience of that noble army in its numerous and immortal campaigns.

From Messrs. Ticknor & Fields—now, since the sudden and lamented death of Mr. Ticknor, to be continued as a historic firm—we have received a volume of "Sermons, by the late Frederick W. Robertson, Minister of Trinity Chapel, Brighton." Mr. Robertson is classed by certain parties as so broad a churchman that he savors of heterodoxy. But he is a pure, devout man, and so outspoken and clear that he who runs may read. We have never seen a more readable volume of sermons,—pithy, short, plain, without that diffuseness which may be necessary in the pulpit, but which becomes turgid and tiresome when presented in print.

"My Cave Life at Vicksburg" is the title of an extremely interesting volume of letters "by a Lady," describing her perils and adventures during the famous siege. The cave was a shelter provided near the house which was inhabited by this lady and her family. The tone is good, and the lady, for a rebel, far more just and less bitter than was to have been expected. There are pictures and maps to illustrate the letter-press. Messrs. Appleton, of New York, are the publishers. 12mo, 196 pp.

Mr. George Cummings McWhorter, whose popular history of the New Testament we lately noticed, again appears before the public in a little volume of "Church Essays." It is an Episcopal work, and treats of the Liturgy, the Trinity, Grace, Truth, Love, Charity, Conscience, and Death. The Essays were originally contributed to the "Church Monthly" in 1861 and 1862. Appletons: 12mo, 194 pp.

Dr. John Ordronaux has kindly sent us his valuable and interesting "Report to the Sanitary Commission." It treats chiefly of the plan of economizing the relief of disabled soldiers, and the proper amendments of the pension laws. Dr. Ordronaux deserves the thanks of the army for the careful study he has given these important subjects, and the valuable suggestions he has thus been enabled to offer. The Report is in the form of an octavo pamphlet of 163 pages.

From Messrs. D. Appleton & Co. we have received a little 12mo volume, entitled "Hints to Riflemen," which will be eagerly read by all who are fond of war or field sports. The author (Mr. H. W. S. Cleveland, of Danvers, Mass.) is evidently himself an expert, and writes *con amore*. He gives, with diagrams, a full description of the various rifles, and their relative value, with their cost.

Messrs. T. B. Peterson & Co., of Philadelphia, have issued "Family Pride:" a Novel, by the author of "Pique." "Family Pride" may stand on its own merits: we think it a better book than "Pique." The plot is quite simple; but the stage-contrivances, secret panels, mysterious disappearances, are equal to those in the Castle of Otranto,—with this superiority, however, that the ghosts all come to life, and the last are quite naturally found, and all in due time. The loves of Margaret Desmond and Leonard Somerton are real and pure. The pride of Mrs. Beaufort has its proper fall; Alice Berners is not a bad girl, after all; Lilian Grant is a blemish to the book,—the devil may take the form of an angel, but is not pleasantly presented in the surgeon's daughter; Mark Braddyl meets a proper fate,—and Mr. Carnegie is metamorphosed to the surprise and satisfaction of the reader. On the whole, we have not lately read a more entertaining and exciting novel than "Family Pride." 12mo, 396 pp.

Our best thanks are due to Messrs. Ticknor & Fields for the duodecimo copy —would it had been the octavo!—of Mr. George Ticknor's Life of William Hickling Prescott, the historian. We had, of course, expected an able work, but were not prepared for so perfect a biography. Written in an easy and natural style, the design is to present a lifelike portrait of the man, without eulogy or exaggeration. The writer nowhere obtrudes himself; and it is only when we draw a long breath, after an eager perusal at one sitting, that we bethink ourselves to call the author in front of the curtain and thank him for his noble and generous work. Happy and successful beyond comparison in his literary life, Mr. Prescott is especially happy in his biographer.

Our space forbids a critical review; but there are some things in this volume which we cannot omit to notice. If the work is admirable and lifelike as a portraiture of Mr. Prescott, it is chiefly instructive in that it presents to the world the difficulties with which he had to contend, and the noble victory which he achieved in removing or overcoming them. His imperfect sight, his own occasional laziness, his affluence, which could never conceive a wolf at the door, to be startled away only by the flourish of the steel pen or blind man's stylus, the difficulty of obtaining his Spanish and other materials, and his great and growing fear of the *irrevocabile verbum*,—these were only a few of the obstacles he encountered so manfully and so triumphantly overcame. From him literary men less trammelled may learn valuable lessons of system, energy, and patient labor.

In writing to a friend concerning one of his works then in progress, Mr. Prescott ejaculates, "*Da Jupiter annos;*" and this cry was echoed all over the country when his Philip the Second made its appearance. We cannot even now check the unavailing regret that he was not spared to finish that, the most beautiful of his histories. It is of a more important period than the others, has to do with more prominent men and events, and is written in a more natural style than any of his other works. It is the best of praise to say that Mr. Prescott was not tempted by his success into perfunctory efforts. His last work is his best. He was just to his great constituency of readers by being true to himself as a scholar and a historian. Although Mr. Prescott enjoyed the applause of the whole civilized world during his lifetime, there is no fear that he will lose in reputation hereafter. He will not, we think, be ranked among the most philosophic historians; but his place is at the very head of the chroniclers. His works are splendid prose epics, or rather, perhaps, superb melo-dramas,—"kingdoms for a stage, princes to act." The men, garbs, and scenes are real; the glowing light is that of the dramatist's own genius.

There is a completeness about this Ticknor-Prescott alliance which all Americans must admire. The historian of Spain and the historian of its literature, both renowned, lived together from boyhood, worked together, stimulated each other to good works, gloried without a single pang of envy in each other's well-earned fame; and, when one goes at last to his better immortality, the other is unsparing of time and love and truth, in writing this beautiful and extended epitaph for the monument which his histories have erected to Mr. Prescott in the heart of every man of culture who reads English, French, Spanish, or Italian.

The "Round Table" is always a welcome visitor. It has more life and young blood than any paper of its kind yet issued. The literary criticisms are frank and fearless; the art-news evidently from the pen of those who cultivate both *belles-lettres* and *beaux arts*. There is an originality, a sort of

new-path tone to this journal, which, after reading the hackneyed commonplaces which we have held in great respect for a quarter of a century,—we dare not confess to more,—is extremely refreshing and invigorating. We hope the "Round Table" will not aspire to be too respectable in this sense, and that the nibs of its editorial pens will not become too soft.

Messrs. Lippincott & Co., of Philadelphia, send us a new issue of "The Federalist," with a long historical introduction by John C. Hamilton, Esq., of New York. The original work needs neither praise nor comment. The papers were written in 1787 and 1788, in order to satisfy the people of this country with just and cogent reasons for the adoption of the new Constitution. Five of these essays were written by John Jay, four by Mr. Madison, three by Alexander Hamilton and Madison together, and all the rest were the work of Hamilton, whose son has now newly presented them to the public. These papers are considered by men of the ripest judgment as a very thorough discussion of the subject of constitutional government, and have been greatly eulogized by such writers as Guizot and Talleyrand. Besides the Federalist Papers proper, we have various resolutions and speeches of Alexander Hamilton, and his "First Plan of Government." The Historical Notice is excellent, full of well-digested information, clearly written, and of great value to the readers of the work. Royal 8vo, 825 pp.

The fourth volume of the "History of the Romans under the Empire," by Charles Merivale, B.D., has just been republished by Messrs. D. Appleton & Co. The work increases in interest. Very learned as it is, drawing facts and illustrations from an apparently exhaustless scholarship, philosophical in the highest degree, it is beautifully enlivened by sketches of Roman life and manners, and by vivid portraitures of Roman citizens of every social grade. The closing chapter, particularly, will please the general reader, treating as it does of theatres, circuses, and amphitheatres, the gladiatorial displays, the bath, and a day in the life of a Roman noble. The presentation of the works of Livy, Virgil, Horace, Propertius, Ovid, Tibullus, as literary types of the Augustan age, is admirable from its clearness and truth. Merivale's work is no second tilling of a great field. He occupies untrodden ground, and will hereafter be the noblest introduction to the study of Gibbon,—or, not to be invidious, Gibbon will be an extended sequel to Merivale. The Appletons have given this distinguished author a fitting garb: the work is beautifully printed and published. 12mo, 466 pp.

Dr. Edward Meyrick Goulburn, of England, has published "Thoughts on Personal Religion, being a Treatise on the Christian Life in its two Chief Elements, Devotion and Practice." It has been edited, with a prefatory note, by Rev. Dr. Houghton, of New York, and republished by the Appletons. It is a very devout book, and has not a spice of cant, which often renders "good books" intolerable. This work is evidently not gotten up for a purpose, but is a record of the inner life of a holy man, whose example, so clearly presented in these precepts, cannot fail to win others to good ways and good works. 12mo, 398 pp.

Messrs. Lippincott & Co. have sent us a small duodecimo of two hundred and sixty pages, bearing the *imprimatur* of Blelock & Co., of Cairo, Illinois, and entitled "The War, its Causes and Consequences, by C. C. S. Farrar, of Bolivar County, Mississippi." A cursory examination of this work does not enable us to give an opinion of its contents. We lay it aside for future perusal, not being willing to commit ourselves to a judgment of the author's views on the momentous topics it discusses without more careful examination.

EDITOR'S SPECIAL DEPARTMENT.

THE Great Campaign which, let us hope and believe, inaugurates "the beginning of the end," is at length opened, and is, while we write, in splendid but terrible progress. Grant is in earnest, and the work will be well done. The noble Army of the Potomac, reorganized and consolidated, and prepared to play one great part—the greatest—in unison with other forces, broke up its encampments on Tuesday night, May 3, and crossed the Rapidan on Wednesday morning,—the Second Corps (Hancock) in front, crossing at Ely's Ford, the Fifth (Warren) and Sixth (Sedgwick) following immediately, crossing at Germanna,—so closely that the support of each corps to the others should be direct and undelayed.

The troops were in magnificent spirits,—thoroughly equipped, accoutred, and supplied, and eager once more to meet the enemy. Correspondents declare that Napoleon never had a better-appointed or more enthusiastic army; and we believe it.

The rebel army did not contest the passage, but fell back, occupying the line from Orange Court-House to Louisa Court-House, covering Gordonsville, and thence defending the entire line of railroad from Gordonsville to Saxton's Junction.

Whether Meade's crossing took them by surprise or not need not be a question. As soon as he was fairly across, Lee launched a heavy column under Longstreet on Thursday, to prevent Grant's army from forming in order of battle, and to throw him into confusion before he could take up the designated positions. These early movements of Lee were not entirely without success.

The first grand attack was against Sedgwick, who, having crossed last, was on our right, resting near the river; and the additional design here was to get between our army and the fords. Grant displayed no concern about the fords or his rear, having no design to use them himself in recrossing. The rebel thunderbolt was caught and hurled back, our army not waiting for the attack, but Sedgwick boldly advancing his lines to meet it. This was a terrific onslaught, and was immediately succeeded by a second attack from Lee.

Quick as light, in emulation of Napoleon's tactics, he hurled a strong column forward to break our centre under Warren, just between the Second and Fifth Corps. In this also he was foiled, after a partial and temporary advantage. Warren, in the centre, advanced upon the Orange Court-House road, but was met by so vigorous a counter-attack that he was temporarily driven back, and lost two guns.

Such was the condition of things on Thursday. The fighting lasted until nine o'clock, when the troops rested on their arms. Our army lay from the river towards the southeast, in a convex line towards the enemy, Sedgwick on the right, supported by Burnside's corps,—which

came up during the fighting,—Warren in the centre, Hancock on the left, with the cavalry towards a point between Parker's Store and Shady Grove Church.

On Friday morning the rebels renewed the attack with great vigor, Longstreet attacking the left wing and A. P. Hill the right. Nobly did Sedgwick and Hancock breast the storm, as in the former days, rallying the troops and fighting like privates to hurl back those tremendous masses; while Warren sent reinforcements to right and left, to aid in stemming the apparently irresistible advance. The fighting again was desperate along the whole line, and the charges of the rebels more than once threw our lines into confusion, and at one time threatened our defeat; but during the night Grant withdrew the Sixth Corps from the right, massing it on our left, and restored the order of battle.

Sullenly did Lee withdraw to his stronger line in rear, leaving a large number of his dead and wounded in our hands. He was not driven back, but retired to take up new positions towards Richmond.

What Hancock's corps had to do, and how it performed its duty, may be in some sort gathered from the loss and wounds of its generals. General Alex. Hays, then commanding the Second Brigade, Third Division, —than whom a better or braver soldier could not be found,—was "dead upon the field of honor," in the battle of the 5th of May. Elsewhere, too, our losses were great:—Getty, Gregg, Owen, Bartlett, and Carroll wounded. Hancock was slightly wounded again while rallying his men. Solid masses of the enemy, line after line, were hurled upon him; but they were met and repulsed. The ground in his front was fought over four or five times.

The needed reinforcements during these severe shocks, which wounded from six to eight thousand of our men, came up, as we have said, in the form of Burnside's Ninth Corps. He made a brilliant forced march of a day and a night from Manassas, and, distributing a portion of his colored troops as railroad-guards, appeared on the field on Thursday night, loudly cheered by the red-handed army whom he came to aid. On Friday he was hotly engaged.

On Saturday morning, Lee retreated towards Spottsylvania Court-House, and General Grant started at once in pursuit. There was only a little infantry skirmishing, which culminated, however, in a general cavalry battle, in which our forces, under Custer, Gregg, Merritt, Davis, and others, held their ground against heavy odds.

On Sunday, Hancock and Burnside pushed on. The Fifth Corps marched all night on Saturday, by the Brock road, and on Sunday a battle was fought in front of Alsop's farm. The rebels held their ground, but in the evening Grant moved forward his whole line. The disposition then was, Hancock on the right, Warren in the centre, Sedgwick on the left, Burnside on the extreme left. On Monday the fighting was, for the first time, principally an artillery battle; and it was then, while superintending the mounting of some cannon, that Sedgwick was killed by the stray shot of a sharpshooter.

Towards evening Grant ordered an advance, but, after terrific fighting, Lee held his ground, and our troops retired to their lines. On Tuesday a severe battle was fought, in which, after immense slaughter, Lee again retreated. Without pretending to give in our limited space either de-

tails or the exact order of events, which we hope to present to our readers hereafter in more permanent papers, we must stop to record the glorious achievement of Hancock on the 12th (Thursday), when, as General Ingalls says, he "made a ten-strike," capturing an entire division four thousand strong, with two generals, and thirty guns. Great as it is, we did not expect any thing else from him. How the rebel generals felt when they were taken after being well shaken, may be gathered from the following anecdote of their behavior:—

"When Hancock heard they were taken, he directed that they should be brought to him immediately. He extended his hand first to Johnson, who was so much affected as to shed tears, saying that he would have 'preferred death to captivity.'

"Afterwards he offered his hand to Stuart, whom he had formerly known, saying, 'How are you, Stuart?' The rebel officer, assuming an air of quiet hauteur, replied, sullenly, 'I am General Stuart, of the Confederate army; and, under present circumstances, I decline to take your hand.' To which Hancock very promptly replied, 'And under any other circumstances, general, I should not have offered it.'"

Hancock fights well with all weapons. He beat Stuart with powder and ball, excelled him in courtesy, and made an admirable *riposte* in sarcastic repartee.

Thursday, another great battle was fought, from daylight to dark, and then from nine P.M. until three o'clock in the morning of Friday: the contest was for a line of rebel rifle-pits, which our men finally succeeded in wresting from the enemy.

On Friday there was still another conflict, principally of Burnside's corps against A. P. Hill, with indecisive results. The setting in of heavy rains has so impeded all later movements that our army has time to rest and prepare for the desperate fighting which still confronts them. Lee has a strong position north of the North Anna: he is bringing up his reinforcements, and straining every thing to get supplies. Grant is also vigorously preparing for an unrelenting prosecution of the campaign, even "if it take all summer."

The remarkable excellence and energy of our cavalry in the present campaign must not be overlooked. Never has this arm so nobly co-operated in the grand tactics of our armies before. Not only did they play a prominent part in the advance across the Rapidan, the main body moving with Hancock to the front, but they have made independent movements since, of the greatest moment to our success. General Sheridan, the commander of the cavalry in the Army of the Potomac, by a rapid détour, got in rear of the rebel army: on the night of the 9th of May he destroyed the depot at Beaver Dam, on the Virginia Central Railroad, with two locomotives and one hundred cars, and more than a million of rations of bread and pork. His men tore up the track for ten miles, breaking up culverts and burning bridges, and recaptured three hundred of our prisoners. Again, moving southeasterly, he destroyed the Ashland depot on the Richmond & Fredericksburg Railroad, fought three battles, killed J. E. B. Stuart, crossed the James River, and joined Butler. He really entered the defences of Richmond, saw the gas-lights of the fated city, and might have taken Richmond; but he did not know exactly Butler's plans and whereabouts, and he knew he could not hold the city.

The exploit of General August V. Kautz also deserves great praise. Marching from Suffolk, he moved upon the Norfolk, Petersburg & Richmond Railroad, which he tore up for several miles. Thence he proceeded to break up the communication on the railroad from Petersburg to Weldon. And, as Butler has destroyed the track between Petersburg and Richmond, the rebellion in this quarter is not simply "cut in two," but into three or four, and Lee, when he makes his final retreat, must move towards Lynchburg,—an ominous name,—where, unless we mistake greatly, the final struggle must come off.

Fredericksburg is our new base and depot of wounded. We have always admired the *élan* with which the rebels make their first attacks, but have also invariably observed that if unsuccessful their spirits droop, and they are not very ready for desperate fighting. Then is the time to follow them and force them with diminished enthusiasm to fight; and if, as we hope, Grant has done this, they will yet be driven a disorderly rabble towards Richmond.

It is not only joining in the public grief that we record the death of Major-General Sedgwick, but with the sorrow of a friendship cherished through long years. A nobler and more generous man never lived,—a truer patriot, a more perfect soldier. Devoted to his profession, most at home in the field, conversant with men, and controlling them with a surplus of moral force, strict, yet popular, brave to a fault, he is an immense loss to the army. Let the country do Sedgwick's memory distinguished honor; for no nobler son has laid down his life for her.

The few words with which the bulletin tells the story of his fall are like a vivid picture to the hearts of all who knew him:—

"There was no skirmishing at the time, but occasionally a sharpshooter sent a bullet in that direction, which caused the cannoneers to wince and to dodge. General Sedgwick was near by, with some of his staff, and twitted the men about their nervousness.

"'Pooh, man! you can't hit an elephant at that distance.' Immediately after, the ball struck him, and the blood began to ooze from his nostrils. He smiled serenely, and fell dead in the arms of his assistant adjutant-general."

The words, the serene smile, are Sedgwick exactly. The sudden fall dead was just what he would have asked, if he had chosen the mode of passing away. Dear old John Sedgwick! all good fellows of the olden time will mingle tears of friendship with the regrets of the army and sorrow of a nation for the loss of one of its ablest and truest defenders.

To return to the theatre of war:—

While these things were progressing at the north, what were Butler and Baldy Smith about? Advancing a large force to the south of the James River, aided by the gunboats, Butler had made two feints, or something more, by sending a force four thousand strong to West Point, at the head of York River, and a cavalry column into North Carolina. Then with his main body, commanded by Smith and Gilmore, he advanced beyond City Point, occupied the triangle between the James and the Appomattox, seized the railroad between Petersburg and Richmond, which he destroyed after a fierce battle, and which he still holds. His only important disaster was the loss of a boat in the James River by a rebel torpedo. At the last news he was besieging Fort Darling, having obstructed the river to keep the rebel rams from coming down.

In such a brief summary as we can offer in these restricted pages, the main facts alone can be presented; but it is our purpose hereafter to give our readers detailed accounts of these splendid achievements from distinguished correspondents who are eye-witnesses and important actors.

Grant's entire plan thus far seems to be in successful operation in all its parts: Meade fighting desperate battles in front; Butler pushing vigorously up from the south; Sigel, to guard against a possible movement on our flank, marching up the Shenandoah valley, to come at a later and auspicious moment upon the immediate theatre of conflict; while Averill in Western Virginia has already moved in the close vicinity of Wytheville, to cut the East Tennessee & Virginia Railroad. Never was there better or more united strategy; and the battle-tactics, even while we write, promise to put the splendid theories into triumphant practice.

The rebels must fight: they cannot now retreat in any direction with safety. Bodies of men might yet pass through towards Danville, but the great mass of stores and artillery cannot be taken away. If, then, we can beat Lee's army, his losses of every kind must be fearful, his destitution immense, Richmond will fall, and the "Confederacy" will become odious in the nostrils of vast masses of its own people.

But the activity of our Northern armies strikes a vibrating congenial chord at the South. Sherman also advances upon Tunnel Hill, and Johnston, now perhaps too much weakened to reinforce Lee, suddenly moves off from Dalton towards Atlanta, while McPherson operates towards Resaca and Rome. Suddenly, Sherman moves by the right flank to join McPherson, beats Johnston at Resaca, and causes him to evacuate Dalton.

Kilpatrick, who carries with his patriotism a strong sprinkling of the old spirit of chivalrous adventure, is said to have left at Tunnel Hill, after his second visit, a note for his classmate Wheeler, who commands the rebel cavalry. It runs thus:—

"I came out to meet you on Friday with five hundred men, which you declined; to-day I came with one thousand; next time I will come with my whole command and annihilate you and your minions. Your classmate,

"J. H. KILPATRICK,
Brigadier-General U. S. A."

While the new Lieutenant-General has been thus concentrating and preparing for the last campaign in what the Richmond "Examiner" calls "the last year of the war," the rebels have taken advantage of the new order of things to inflict some injury in a small way upon minor points left—whether properly or not—without adequate protection.

Such was the nature of their attack on Plymouth, which resulted in the fall of the place, after a very heroic resistance on the part of General Wessels and his small garrison, less than two thousand strong. They came down the Roanoke ten thousand strong, with an iron ram, and attacked Fort Gray, about a mile distant from the town. At first gallantly repulsed by General Wessels, they returned in thronging numbers: the ram succeeded in passing the obstructions in the night, and destroyed our gunboats "Bombshell" and "Southfield." Four rebel gunboats followed behind the ram, and Plymouth, being at their mercy, and cut off from succors, was obliged to capitulate. General Wessels

surrendered about sixteen hundred men and twenty-five pieces of artillery. As at Fort Pillow, the negroes found in uniform were inhumanly butchered, and great barbarity is said to have been inflicted on some North Carolina men who had espoused the righteous cause. Verily, both rebels and sufferers shall yet have their reward.

From Plymouth the rebels moved upon Little Washington and Newbern. Just at this juncture, General Peck was relieved of his command in that district, and it devolved upon General Innis Palmer, who seems to have acted most wisely in abandoning Washington, much to the chagrin of the rebels, who came only to find it in flames, stores, artillery, and every thing removed, while its garrison had gone to strengthen Newbern. But, before they could invest Newbern, news reached them that Grant was moving, and they started post-haste for Richmond.

It is not to be disguised, notwithstanding the long preparations of the public mind, that General Banks has met with serious disaster on the Red River; and that, too, after the promise of a brilliant success. We would gladly pass over this ugly story, but must not. He was pushing forward with the Trans-Mississippi Army to Shreveport, and met with no resistance until the 7th of April. His head-quarters were at Grand Ecore: he moved his forces westward from the river to where the road forks at Crump's Corners, and then, taking the right-hand road, he encountered the enemy at Pleasant Hill. There were three days of hard fighting. On the first day, after the Union cavalry had driven back the rebel advance some two miles, the rebels made a fierce onset, driving back the Fourth Division of the Thirteenth Corps, routing the cavalry, and capturing the Chicago Battery. The Third Division of the same corps came to the rescue, but was also driven back in disorder. The rebels were successful at all points.

Our fortune was no better on the second day, when Franklin's command was unable to repulse the brilliant attacks of Kirby Smith, Dick Taylor, Mouton, and others, with an army of twenty-two thousand. On this day, General Mouton was killed. What was to be done? The public was led to expect a new advance on our part, with entire success.

The third day did, indeed, somewhat retrieve the fortune of the battle, but could not achieve a victory. After holding a council of war, General A. J. Smith was pushed forward to Pleasant Hill, to check the enemy's advance. After a furious battle, Smith ordered a charge, which caused the enemy to break in disorder and fly from the field. Our troops slept where they fought, but the next day fell back to Grand Ecore, and thence to Alexandria, where, by last accounts, the enemy was investing them.

Steele, who was moving down upon Shreveport with twenty thousand men to form a junction with Banks, had advanced upon Camden, beating Price and Marmaduke at Elkin's Farm and Prairie d'Aina; but, upon hearing the ill success of Banks, he returned to Little Rock. It is of no use to mince matters: the Red River expedition is a great failure.

To make matters far worse, a large fleet of gunboats and transports were taken up the river above Alexandria. The waters fell suddenly and left them above the shoal or raft, and there they are, exposed to the rebels. Many have been destroyed, and others will be, unless the river should suddenly rise,—which it may be perverse and rebellious enough not to do, just because we desire it.

What do we want with Shreveport? Why in the world was the Trans-Mississippi Army sent to make explorations in "the forest primeval," when we needed troops here, where the heart of the rebellion is? In comparison, the Red River is not even the tip end of its toe-nail. That is concentration with a vengeance! But the chief military criticism upon this expedition will be the manner in which the battle was fought. The rebels were in compact lines and masses, well in hand, while we, with plenty of force, were beaten in detail, first one division, then another, with no adequate succor at hand. We write, of course, *sauf correction*; but really this part of the affair is to us inexplicable.

The Western movement, placing three-months volunteers in the field, is, on the whole, a good one, but only so in just such a crisis as this. As a general rule, three- or even six-months men are entirely valueless as an army; but just now they are to play a helping part by guarding their own frontiers and being employed in forts, while our veterans do the hard work which they have learned so well how to do. Ohio, Indiana, Illinois, Iowa, have thus raised in aggregate eighty-five thousand men for one hundred days, who are to be paid and clothed by the Government.

Governor Parker, of New Jersey, has been empowered by the War Department to raise one regiment of heavy artillery, of twelve companies, by the 10th of May, and, later, to call out the militia.

In expressing our sincere sorrow at the loss of the distinguished veteran General Totten, who died, full of years and honors, on the 22d of April, at Washington, we cannot use more fitting terms than those of the following concise but eloquent order:—

[General Orders No. 179.]

"War Department, Adjutant-General's Office,
"Washington, April 23, 1864.

"Another, and among the last, of the heroes of our 'Second War of Independence,' is gone. Brevet Major-General Joseph Gilbert Totten, Chief of Engineers of the United States Army, departed this life on the 22d instant, in this city, in his seventy-sixth year.

"General Totten was born August 23, 1788, in New Haven, Connecticut, and graduated at the Military Academy in 1805, from which he was promoted to the Corps of Engineers, and, with a brief interval, from 1806 to 1808, continued in that arm of service, passing honorably through every grade till he became, in 1838, Chief Engineer of the army. The Senate, before his death, unanimously confirmed his nomination by the President to be 'major-general by brevet, for long, faithful, and eminent services.'

"General Totten's military career, of more than half a century, has been one of continued usefulness and distinguished services. In 1812, he was called to the field to assume the arduous and responsible position of chief engineer of the army, on the Niagara frontier, where he took a conspicuous part in the attack on Queenstown Heights, and, the following year, in the capture of Fort George, Upper Canada, and repulse of the British flotilla on Lake Ontario. In 1813–14, he became chief engineer of the forces successively commanded by Generals Wilkinson, Izard, and Macomb,—was in the attack on La Cole Mill, Lower Canada, and the battle of Plattsburg. In this brief war, General Totten won the respect and admiration of his brother officers, and the marked approbation of the Government, which conferred upon him two brevets for his meritorious and distinguished services. On the return of peace, his high

professional abilities were called into activity on the Board of Engineers which projected our extended line of lake-defences and sea-coast fortifications. These works, most of which were planned by himself, are the enduring monuments to his memory. In the war with Mexico, General Scott summoned his early companion-in-arms to aid him in the siege of Vera Cruz, where, for his 'gallant and meritorious conduct,' General Totten was breveted a brigadier-general. For the past twenty-six years, he has been at the head of the Engineer Department, administering, with untiring devotion, spotless integrity, and signal ability, the varied duties, the financial responsibilities, and the professional labors of that arm of service, so essential to our national defence.

"In addition to General Totten's multiplied military avocations, he was an active member of the Light-House Board, from its organization in 1852; a Regent of the Smithsonian Institution, from its establishment by Congress in 1846; a corporator of the National Academy of Sciences, created in 1863; one of the Harbor Commissioners for the cities of New York and Boston; and a member of many scientific associations.

"Distinguished for urbanity of manner, genial social qualities, and that great moral excellence which adorns the Christian soldier and gentleman, he has left behind an exalted reputation worthy the emulation of his brother officers, and which his surviving children may well regard as a priceless legacy.

"As a tribute to his memory, the officers of the Corps of Engineers and Military Academy will wear the prescribed badge of mourning for thirty days, and the day after the reception of this order at the Military Academy, half-hour guns will be fired there from sunrise to sunset, and the national flag be displayed at half-mast.

"By order of the Secretary of War:

"E. D. TOWNSEND,
"*Assistant Adjutant-General.*"

We are sorry to record the death of Commodore William D. Porter, of the Navy. He was worn out by hard service, and thus, on the 1st of May, he gave up his life for his country, as truly as if he had fallen in battle on that day.

The following stirring and patriotic poem has been copied in many newspapers; but it is worthy of a permanent place in our literature. To give it a more secure resting-place than it has yet found, we present it to our readers:

THE REVEILLE.

Hark! I hear the tramp of thousands,
And of armèd men the hum:
Lo! a nation's hosts have gather'd
Round the quick alarming drum,
Saying, "Come,
Freemen, come,
Ere your heritage be wasted!" said the quick alarming drum.

"Let me of my heart take counsel:
War is not of Life the sum:
Who shall stay and reap the harvest
When the autumn days shall come?"
But the drum
Echoed, "Come!
Death shall reap the braver harvest!" said the solemn-sounding drum.

"But, when won the coming battle,
What of profit springs therefrom?
What if conquest, subjugation,
Even greater ills become?"
But the drum
Answer'd, "Come!
You must do the sum to prove it!" said the Yankee answering drum.

"What if, 'mid the cannons' thunder,
Whistling shot, and bursting bomb,
When my brothers fall around me,
Should my heart grow cold and numb?"
But the drum
Answer'd, "Come!
Better there in death united than in life a recreant! Come!"

Thus they answer'd,—hoping, fearing,—
Some in faith, and doubting some,—
Till a trumpet voice, proclaiming,
Said, "My chosen people, come!"
Then the drum,
Lo! was dumb,
For the great heart of the nation, throbbing, answer'd, "Lord, we come!"

We are pained to announce the death of Captain Joseph P. Ash, 5th United States Regular Cavalry, who was killed in the great battle near Spottsylvania, Virginia, on the 8th of May.

This young officer was born and educated in Philadelphia, and, at the commencement of the present war, was appointed a lieutenant in the Regular Army. An enthusiast in the cause of his country, fearless of all danger, and a splendid horseman, he soon showed himself a thorough, active, and capable cavalry leader. His military record is brilliant. In many battles he has led his men into the thickest of the fray, and at Warrenton, Virginia, in September, 1862, in one of his dashing charges, routed the enemy, but fell, covered with wounds. It is only a few weeks since that the heart of the country was thrilled by his daring exploit, defeating Stuart's rebel cavalry and destroying his camp, ammunition, and wagons. A counterpart of the brave and lamented Reynolds, Captain Ash adds another to the list of noble Pennsylvania heroes and martyrs to this unholy rebellion.

FOREIGN AND INTERNATIONAL.

So intently are our eyes and hopes fixed upon the focal centres on the grand theatre of war at home, that we hardly have patience to turn them abroad to see how Europe is behaving.

The Danish question is, of course, of the first importance. The war continues, even while the Peace Conference opens its session. It was to have met in London in the middle of April. Meantime, the Prussians attack Duppeln with vigor, and with an evident determination to succeed. Repulsed in two attempts to storm the works, they undertake the siege, opening two parallels, and running boyaux up to the works. The Danes hold out for a while, and make war reprisals with their men-of-war upon Prussian vessels at the mouth of the Elbe; but at length, hard pressed by the Prussians' advance, they evacuate Dup-

peln with the main body, after a vigorous Prussian attack, and retreat to the adjoining island of Alsen, thus virtually abandoning the continent. With Duppeln they lost eighty-three guns and three thousand prisoners. What next? The Peace Conference may yet do something: if not, look out for a general war, into which England—once the bellicose, but now the pacific—will be forced, whether she will or not. By the last accounts, the Danes have also evacuated Frederica and gone to Funen Island.

Apropos of England, the London "Times" discourses of the Monroe doctrine, and finds comfort in the fact that "the Federal Senate has refused to support this doctrine." But our chief purpose in bringing the "Times" upon the carpet is to quote a few words from the same article with reference to our present struggle:—

"Such is the tenacity with which the people of the Northern States have clung to their idea of Union and empire, and such is the elasticity of the public mind at the first turn of fortune, that another month may perhaps leave the peace party with even more slender chances of ascendency than they seem to possess at present. A victory does more to encourage the Federals than half a dozen defeats to dishearten them; and if General Grant's operations against Richmond should be attended with even a partial success, this exhausting war may acquire a new impetus, and run its course as ruinously as before."

All true, except the last few words. If General Grant's operations succeed, there will be no new impetus of war; but we shall have PEACE, just as surely as we live. History teaches it; many of the rebels acknowledge it; the "Times" knows it. When we pray for Grant's success, it is equivalent to praying for a speedy peace.

And of Mexico, what? On the 10th of April, Maximilian was proclaimed emperor, at Miramar. The Mexican flag was displayed, and twenty-one guns fired as a grand imperial salute. On the 13th, he was to go to Rome for the Papal blessing; but he was again a little sick, and had to put off the anticipatory consecration for a few days. He resigns his claims to the Austrian throne for himself and his posterity, unconditionally, and is off to rule a people with whom he has nothing in the world to do. It is a dream, in the nineteenth century, the age of democratic liberty. The awaking must soon come.

In the "chronique" of the "Revue des Deux Mondes" for the 1st of February, we find a decided dissent to the Emperor's actions with regard to Mexico. It has special reference to the able pamphlets of Thiers on the general subject. "Most surely," says the editor, "had M. Thiers been in the Chamber in 1861 and 1862, he could have enlightened at once the country and the government upon the inevitable consequences of the Mexican expedition; he could have shown, from the beginning, that we had no right to expect the concurrence of England and Spain; that if we wished to push the enterprise so far as to realize a change of government, we should remain alone; that, remaining alone, we should be obliged to make an effort ruinous to our finances, in order to obtain military results which could not assure permanent political results." And again: "The whole world agrees that France seeks nothing now in Mexico but an honorable pretext to get out of it. If, in exchange for the precarious throne which we have

procured for him, the Archduke Maximilian will be good enough to furnish us this pretext, the two parties will be quits: the archduke can ask nothing more of us, and we shall only owe him our good wishes for his success."

To this "precarious throne," with such opinions of thoughtful men, Maximilian goes, like a moth to his candle. Austria permits him to recruit there six thousand men for his imperial army, and three hundred for his navy: and here we stay the record, until he comes to his throne.

CORRESPONDENCE.

A VOICE FROM STATE TENNESSEE.

EDITOR "UNITED STATES SERVICE MAGAZINE:"

DEAR SIR:—Having learned from a friend of mine that you will be glad to receive a statement with reference to the condition and the wants of East Tennessee, I beg leave to remit to you a few statements on that subject.

The rebellion found me pleasantly situated on a farm near Knoxville, and more or less engaged in missionary labors. After the outbreak of the rebellion I endeavored for more than a year to remain in East Tennessee, hoping from day to day that the troops of the United States would come to our relief. At last I had to flee. At that time, I published my "Testimony" with regard to the fearful wrong which the South has committed in rebelling against the Government of the United States, and with reference to the loyalty and the sufferings of East Tennessee. Since that time more than two years have passed away. During a portion of this time large armies of the Confederates have been quartered in East Tennessee; and the cruelties of which I witnessed the beginning have been carried to an extent which almost surpasses belief. In saying that during this whole period of time Union citizens have been arrested without warrant for alleged military offences, imprisoned at the pleasure of petty military tyrants in violation of all law, forced to take oaths against their consciences and in derogation of their allegiance to the United States; that they have been taxed with illegal costs to support corrupt officials; that their property has been seized for public and individual uses; that their fields have been laid waste; that, in some instances, houses have been burned over the heads of families as a punishment of their loyalty; and that, in *many* others, men have been butchered by a lawless soldiery, or officially murdered by a military court, is but a touching summary, such as the leading men of East Tennessee have given in their address to the President of the United States. Touching as it is, it cannot set before your readers the *heart-rending woe* which fills a vast portion of the truest and most devoted Union men, women, and children of that mountain-region. Let your readers remember that twenty-five thousand of the men able to work are in the army of the United States; that during more than two years the blockade of the ports of the South, so disastrous to the Confederacy, has embraced also these devoted friends of the Union, whose lot was cast in the very midst of the rebellion; that since the occupation of the country by the United States troops, the railroad to Nashville has not always been in running order; that the troops coming through Cumberland Gap could not bring supplies a distance of one hundred and eighty miles; that they found the people of East Tennessee with a reduced crop, produced in a great part by women and children; that these people, overflowing with gratitude, gave up their scanty stocks without seeming to count the cost or consider the probability of payment; that, since the advent and the defeat of Longstreet, the Union and the Confederate armies have in turn traversed the country and exhausted its remaining resources:

and I ask whether we have reason to be astonished that at the present moment the cry of the starving is going up from the mountains and valleys of East Tennessee, and from refugee East Tennesseeans who have fled to Murfreesborough and to other places, or that, in some cases, that cry is hushed because starvation has done its work? Robbed of their horses, of their seed-corn, of their cattle and hogs, their fences destroyed, their farms the camping or the battle ground of the contending armies, what else could be the result? To bring about a different state of things, the people of East Tennessee ask for the completion of the railroad from Stanford to Knoxville. The Government has fed hundreds, and perhaps thousands, of the suffering East Tennesseeans; but it can do so no longer, because the only means of transportation—by the Nashville & Chattanooga Railroad—hardly suffices to meet the wants of the army. One hundred and thirty miles of railroad, which can be constructed in the space of six months, will bring East Tennessee in easy communication with Louisville and Cincinnati. When I was the other day in Washington, and incidentally met a member of Congress with whom in past times I had been slightly acquainted, I spoke to him of the fact that this road would develop immensely the mineral resources of that region of country, from Stanford to far beyond Knoxville. "The Constitution," was the reply, "gives me no right to construct this road to develop the mineral resources of East Tennessee." I then dwelt on the fact that this road would relieve thousands of suffering men, women, and children. Again I was told that the Constitution does not give Congress the right to construct a railroad for such purposes. I then put its construction on the ground of military necessity, the army having been reduced to extraordinary straits for the want of that communication; and I was told, in reply, that he did not see why on that ground he should not vote for the construction of that road. Let it be done, then, on that ground, if it cannot be on any other. At the same time, I cannot forget that in this case, as in so many others, the necessities of the times God overrules for good. Every arm which is employed in constructing this road, in order to facilitate our military movements, is employed also in planting towns and villages in the mineral regions of East Tennessee, and in applying the immense water-power of that mountain-district to manufacturing purposes, and in preparing the way for the time when the native industry of the people, in conjunction with the opening of this communication with the North, shall soon restore to them a comparative state of comfort.

The generous efforts on the part of the North to relieve the people of East Tennessee furnish but another proof of the necessity of increasing the means of communication with that region of country. The report of the gentlemen who were sent from Philadelphia to be the bearers of help to the sufferers in East Tennessee testifies to that fact; and since that report has been written, the various relief associations which have been formed in the North have had to contend with this difficulty. In saying this, I would, however, not be understood to intimate that those efforts should cease. Far from it! A large portion of East Tennessee is held by the enemy at this very moment. In the same measure, as our army proceeds, and other portions of East Tennessee are occupied by it, a great number of families will be placed within our lines in an utterly helpless condition. Many of these, to escape starvation, will desire to be transferred to portions of our country where the difficulties of communication do not exist, and where help can reach them.

In conclusion, permit me to beg pardon of you and of your readers in submitting to you and to them so imperfect a document on so interesting and im-

portant a subject. I might have done better, perhaps, if my professional labors had allowed me to devote to this task the needed time.

H. Bokum.

Mr. Editor:—Allow me to call the attention of your readers to a matter of rare interest. There is now for sale the *only* gold medal awarded by Congress to General Washington. It is of solid gold, to the value of $180, par. On one side is a beautiful medallion bust of Washington; on the other, a descriptive scene of the evacuation of Boston. The whole is beautifully executed in relief. It was stamped in Paris during the Revolution, and presented after the evacuation of Boston by the British. This, sir, is the rarest and most valuable relic of those memorable days, and of that man so dear to Americans. The present proprietor is a near descendant of Washington, and compelled, from losses sustained by the war, to part with this valuable heirloom. It would be his desire that some historical society should possess it, or the United States. An individual has offered $5000 already; but double that sum is adjudged to be its value. When it is remembered that this is the only, the most intrinsically valuable reminiscence of the days when our country's prosperity was purchased by fiery trials and blood, its value is greater than that which can purchase it now. Years will add value, and make it more precious as a relic.

Frater.

N. B.—Our "Military Notes and Queries" are crowded out of this number, but will appear in the next.

OUR FIRST VOLUME.

Our readers will observe that this sixth number of the United States Service Magazine finishes the half year, and brings us to the dignity of Vol. I.

It is with peculiar pride that we now look back upon its brief but successful progress. Warmly received, and kindly assisted with voice and pen, by our old friends, many of whom now command great bodies of men, and whose names ring through Fame's trumpet throughout the world, it has also been met with hearty encomiums from our veteran volunteers, the critical press of the country, and large numbers of our best citizens everywhere. It is a decided and most gratifying success.

Our true ambition is, to be the real representative of the sister services. Our principal papers must come, as they have heretofore, from hands which habitually handle the sword. Our chief support is looked for from our enlightened officers and soldiers, and from those at home who follow their every movement with intense interest. To do full justice to all; to remove ignorance, general and special, on military subjects; to make known all the real wants and proper wishes of the service; such have constituted, and such will continue to be, our aim; and we may declare, without arrogance, that the bound volumes, indexed for reference, will form a compact military library, of convenient book-form, which in the future will be invaluable as a record of the war and of the progress of the military art. In this respect our enterprise has neither rival nor competitor.

OFFICIAL INTELLIGENCE.

The Army.

Memorandum.

QUARTERMASTER-GENERAL'S OFFICE,
WASHINGTON, D. C., April 13, 1864.

Memorandum to General Orders No. 12, 1864.

The eleventh paragraph of the circular of the Second Comptroller, republished in General Orders No. 12, current series, has been changed to read as follows:—

11. Soldiers rendering little or no service on the day of enlistment or discharge, payment for both by the Government is unjust. The day of *enlistment*, therefore, will hereafter be allowed, and the day of *discharge* excluded.

M. C. MEIGS,
Quartermaster-General United States Army.

[Special Order No. 9.]

QUARTERMASTER-GENERAL'S OFFICE,
WASHINGTON, D. C., April 18, 1864.

Lieutenant-Colonel C. W. Tolles, Chief Quartermaster of the Sixth Army Corps, will report in person, without delay, to the Adjutant-General, for orders to resume his duties as Chief Quartermaster of the Sixth Army Corps.

M. C. MEIGS,
Quartermaster-General.

Military Academy Appropriations.

[General Orders No. 138.]

WAR DEPARTMENT,
ADJUTANT-GENERAL'S OFFICE,
WASHINGTON, April 4, 1864.

The following act of Congress is published for the information of all concerned:—

Public, No. 36.

An Act making appropriations for the support of the Military Academy for the year ending June 30, 1865.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums be, and the same are hereby, appropriated out of any money in the Treasury not otherwise appropriated, for the support of the Military Academy for the year ending the 30th of June, 1865.

For pay of officers, instructors, cadets, and musicians, one hundred and seventeen thousand one hundred and seventy-six dollars.

For commutation of subsistence, four thousand one hundred and sixty-one dollars.

For pay in lieu of clothing to officers' servants, sixty dollars.

For current and ordinary expenses, as follows: repairs and improvements, fuel, and apparatus, forage, postage, telegrams, stationery, transportation,

printing, clerks, miscellaneous, and incidental expenses, and departments of instruction, forty-one thousand two hundred and eighty dollars.

For gradual increase and expense of library, one thousand dollars.

For expenses of the board of visitors, four thousand dollars.

For forage for artillery and cavalry horses, eight thousand six hundred and forty dollars.

For supplying horses for artillery and cavalry exercise, one thousand dollars.

For repairs of officers' quarters, one thousand five hundred dollars.

For targets and batteries for artillery exercise, one hundred dollars.

For furniture for hospital for cadets, including fixed wash-tubs, hot and cold water bath apparatus and water-closets, one thousand dollars.

For annual repairs of gas-pipes and retorts, three hundred dollars.

For warming-apparatus for barracks, fifteen thousand dollars.

For rebuilding public wharf and opening approach to the same from the south, six thousand dollars.

SEC. 2. *And be it further enacted*, That the thirty-fifth section of the act entitled "An act for enrolling and calling out the national forces, and for other purposes," approved March 3, 1863, shall not be deemed hereafter to prohibit the payment to enlisted men employed at the Military Academy of the extra-duty pay heretofore allowed by law to enlisted men when employed at constant labor for not less than ten days continuously.

SEC. 3. *And be it further enacted*, That from and after the first day of July, 1863, the annual pay of cadets at the Military Academy at West Point shall be the same as that allowed to midshipmen at the Naval Academy, and the amount necessary for that purpose is hereby appropriated.

SEC. 4. *And be it further enacted*, That cadets found deficient at any examination shall not be continued at the Military Academy, or be reappointed except upon the recommendation of the Academic Board.

SEC. 5. *And be it further enacted*, That no part of the money hereby appropriated shall be applied to the support or pay of any cadets hereafter appointed not in conformity with the expressed provisions of law regulating appointments of cadets at that Academy.

Approved April 1, 1864.

By order of the Secretary of War:

E. D. TOWNSEND,
Assistant Adjutant-General.

Dismissals

For the Week ending April 9, 1864.

Lieutenant-Colonel August Otto, 58th New York Volunteers, and Captain W. A. Harn, 3d New York Independent Battery, to date March 14, 1864.

Assistant Surgeon David Scott, and Assistant Surgeon James Fulton, 143d Pennsylvania Volunteers, to date April 8, 1864.

First Lieutenant Isaac A. Nesbit, 1st Pennsylvania Artillery, and First Lieutenant James A. Smith, 72d New York Volunteers, to date March 14, 1864.

First Lieutenant Robert D. Adams, First Lieutenant William Frisbee, and Second Lieutenant James McGuire, 40th Kentucky Volunteers, to date November 1, 1863.

Second Lieutenant George B. Worcester, 2d Vermont Volunteers, to date April 5, 1864.

Second Lieutenant James Brennan, 78th Ohio Volunteers, to date April 8, 1864.

The following officers, to date March 14, 1864, for the causes mentioned, having been published officially and failed to appear before the Commission:—

Absence without Leave.

First Lieutenant C. A. Waterhouse, 5th Maine Volunteers.
Second Lieutenant William Zeigler, 43d Illinois Volunteers.

Disobedience of Orders.

Second Lieutenant William M. Whaling, 49th Illinois Volunteers.

Dismissals Revoked.

The orders of dismissal heretofore issued in the following cases have been revoked:—

Chaplain W. Gibson, 45th Pennsylvania Volunteers, he having been previously honorably discharged.

First Lieutenant W. T. Worrall, 4th United States Colored Troops, and Second Lieutenant Charles A. Brown, 4th United States Colored Troops, and they have been discharged as of the date of the order of dismissal.

Restored to Commission.

The following officers, heretofore dismissed, are restored, with pay from the date at which they rejoin their regiments for duty, provided the vacancies have not been filled by the Governors of their respective States:—

Major E. M. Carey, 12th Ohio Volunteers.

Captain James B. Luckey, 3d Ohio Cavalry.

Captain George A. Armstrong, 7th Michigan Cavalry.

First Lieutenant John Jones, Second Battalion Veteran Reserve Corps, provided the vacancy has not been filled.

Dismissals

For the Week ending April 16, 1864.

Colonel Asher S. Leidy, 99th Pennsylvania Volunteers, to date April 9, 1864.

Lieutenant-Colonel L. M. Ralston, 109th Pennsylvania Volunteers, to date April 12, 1864.

Major Henry M. Alles, 74th New York Volunteers, to date March 21, 1864.

Major Siegfried Von Fostner and Captain John Stull, 3d New Jersey Cavalry, to date April 11, 1864.

Captain Albert Hertzberg and Captain F. W. Schaefer, 3d New Jersey Cavalry, to date April 11, 1864.

Captain S. C. Means, 3d West Virginia Cavalry, to date April 13, 1864.

Captain M. A. Downing, 1st New York Mounted Rifles, to date April 15, 1864.

Lieutenant and Adjutant N. Flansbury, 57th Illinois Volunteers, to date April 9, 1864.

Assistant Surgeon Samuel T. Storer, 99th Ohio Volunteers, and First Lieutenant Charles G. Baldwin, 18th Ohio Volunteers, to date April 12, 1864.

Lieutenant W. G. Algie, 1st Maryland Cavalry, to date April 11, 1864.

Second Lieutenant Nisbet Comly, 1st Ohio Heavy Artillery, to date April 9, 1864.

Second Lieutenant James Colter, 34th Ohio Volunteers, to date December 8, 1863.

Second Lieutenant John C. Howard, 46th Ohio Volunteers, to date April 11, 1864.

The following officers, to date March 21, 1864, for the causes mentioned, having been published officially, and failed to appear before the Commission:—

Absence without Leave.

Captain J. H. Baker, 1st United States Sharpshooters.

For Improperly Enlisting a Minor.

Captain James A. Harris, 4th Ohio Cavalry, and Captain S. A. Clark, 5th Independent Battalion, Ohio Cavalry.

Absence without Leave from Camp Parole since January 30, 1864.

Second Lieutenant Lewis Kuster, 9th Ohio Volunteers.

Dismissal Confirmed.

The order revoking the dismissal of and discharging First Lieutenant William T. Worrall, 4th United States Colored Troops, has been revoked, and the dismissal of Lieutenant Worrall, to date March 23, 1864, has been confirmed.

Dishonorably Discharged.

Colonel John Stockton, 8th Michigan Cavalry, and Captain A. C. Stockton, 8th Michigan Cavalry, to date April 15, 1864.

First Lieutenant L. C. Kent, 32d United States Colored Troops.

Mustered Out.

First Lieutenant Wm. P. Offley, 1st Delaware Cavalry, to date April 11, 1864.

The muster out of Captain Timothy M. Wilcox, 3d Missouri Cavalry, to date March 26, 1864.

Dismissals Revoked.

The orders of dismissal in the following cases have been revoked:—

Captain George W. Hill, 18th United States Infantry.

Captain Timothy Guilford, 20th Connecticut Volunteers, and he has been honorably discharged as of the date of the order of dismissal.

Captain E. P. Boas, 20th Illinois Volunteers, satisfactory evidence having been furnished that the charge upon which he was dismissed was erroneous.

Captain F. Seguin, 76th Illinois Volunteers, published March 8, 1864, as Captain F. Leguin, 76th Illinois Volunteers, and he has been honorably discharged as of the date of the order of dismissal.

Hospital Chaplain John A. Spooner, U. S. A., and his resignation has been accepted, thus leaving him honorably out of the service, to date February 8, 1864.

Lieutenant S. C. Collins, 23d Indiana Volunteers, satisfactory evidence having been furnished that he died in November, 1863, from disease contracted in the line of his duty.

Lieutenant John V. Bovell, 66th Illinois Volunteers, and he has been honorably discharged, to date August 13, 1863.

Dishonorable Muster Out Revoked.

The order dishonorably mustering out of service Assistant Surgeon Washington Burg, 122d Pennsylvania Volunteers, as Assistant Surgeon Washington Bury, 122d Pennsylvania Volunteers, has been revoked, and he has been honorably discharged, to date May 16, 1863.

Restored to Commission.

The following officers, heretofore dismissed, are restored, provided the vacancies have not been filled by the Governors of their respective States:—

Captain D. H. Connors, 2d Pennsylvania Reserves; Captain James Durgine, 7th New Hampshire Volunteers; and Captain Granville P. Mason, 7th New Hampshire Volunteers, with pay from the date at which they rejoin their regiments for duty.

Surgeon J. B. McConaughy, 17th Missouri Volunteers.

Dismissals

For the Week ending April 23, 1864.

Major W. T. Strickland, 52d Indiana Volunteers, to date April 16, 1864.

Captain P. J. Phillips, 3d Regiment Veteran Reserve Corps, to date April 9, 1864.

Captain Daniel Gillett, 120th New York Volunteers, to date March 28, 1864.

Assistant Surgeon James C. Thorpe, 9th Ohio Cavalry, to date April 18, 1864.

Assistant Surgeon Thomas L. Morgan, 10th Missouri Volunteers, to date April 20, 1864.

First Lieutenant Francis E. Lacey, 2d United States Infantry; First Lieutenant Thomas Byrne, 2d United States Infantry; and First Lieutenant James Butler, 2d United States Infantry, to date April 21, 1864.

Second Lieutenant Addison M. Bloom, 128th Ohio Volunteers, to date April 16, 1864.

Second Lieutenant J. H. Nessell, 7th Kansas Cavalry, to date April 18, 1864.

Second Lieutenant Max Von Caspers, 4th Missouri Cavalry, to date April 22, 1864.

The following officers, to date March 28, 1864, for absence without leave, having been published officially and failed to appear before the Commission:—

Surgeon A. Weidenbach, 37th Ohio Volunteers.

Second Lieutenant Alexander D. Patten, 118th Indiana Volunteers.

The order of dismissal heretofore issued in the case of Captain Henry W. Manning, 61st Illinois Volunteers, to date March 26, 1864, has been confirmed.

Dishonorably Discharged.

First Lieutenant John Walkinshaw, 62d Pennsylvania Volunteers, to date April 20, 1864.

Dismissals Revoked.

The orders of dismissal in the following cases have been revoked:—

Captain M. A. Downing, 1st New York Mounted Rifles.

Assistant Surgeon David Scott, 143d Pennsylvania Volunteers; and he has been honorably discharged upon tender of resignation, as of the date of the order of dismissal.

Restored to Commission.

The following officers, heretofore dismissed, are restored, with pay from the date at which they rejoin their regiments for duty, provided the vacancies have not been filled by the Governors of their respective States:—

Captain W. A. Harn, 3d New York Independent Battery.

Lieutenant George Brown, 7th Vermont Volunteers.

Dismissals

For the Week ending April 30, 1864.

Major Darius Titus, 12th Pennsylvania Cavalry, to date April 25, 1864.

Chaplain A. J. Lyda, 3d Virginia Mounted Infantry, to date April 29, 1864.

First Lieutenant W. M. Kern, 41st Pennsylvania Volunteers (12th Pennsylvania Reserve Corps), to date April 28, 1864.

First Lieutenant S. L. Tiller, 3d Tennessee Cavalry, and Second Lieutenant David Wittey, 9th Kentucky Volunteers, to date April 27, 1864.

Second Lieutenant M. H. Maroney, 16th New York Cavalry, to date April 23, 1864.

Dismissals Revoked.

The orders of dismissal in the following cases have been revoked:—

Colonel John P. Post, 8th Illinois Volunteers, and he has been discharged upon tender of resignation, as of the date of the order of dismissal.

Surgeon H. Tammage, 34th Kentucky Volunteers, he having been previously acquitted on the charge upon which he was dismissed by a military commission.

Captain Jacob Bierer, 11th Pennsylvania Volunteers, and he has been honorably discharged, to date April 2, 1864.

Captain John W. Hopkins, 93d Illinois Volunteers, he having been previously honorably discharged.

The order of dismissal in the case of Colonel Ambrose A. Lechler, 176th Pennsylvania Volunteers, has been so amended as to honorably discharge him as of the date of the muster out of the regiment.

Restored to Commission.

The following officers, heretofore dismissed, are restored, provided the vacancies have not been filled by the Governors of their respective States:—

Lieutenant-Colonel George H. Bowman, 102d Ohio Volunteers.

Captain Daniel Gillett, 120th New York Volunteers.

First Lieutenant Samuel E. Beers, 19th Pennsylvania Cavalry.

First Lieutenant John Conner, 69th Pennsylvania Volunteers, with pay from the date at which he rejoins his regiment for duty.

Lieutenant Joseph Lidick, 66th Illinois Volunteers, with pay from the date at which he rejoins his regiment for duty.

E. D. TOWNSEND,
Assistant Adjutant-General.

Appointments by the President.

BY AND WITH THE ADVICE AND CONSENT OF THE SENATE.

TO BE MAJOR-GENERAL.

Brigadier-General James B. Steedman, of the United States Volunteers, to be Major-General in the Volunteer force, agreeably to the nomination, confirmed April 20, 1864.

TO BE BRIGADIER-GENERALS.

Colonel Alexander Shaler, 65th New York Volunteers, May 26, 1863.
Colonel Jasper A. Maltby, 45th Illinois Volunteers, August 4, 1863.
Joseph J. Bartlett, of New York, April 2, 1864.
Colonel Joshua T. Owen, 69th Pennsylvania Volunteers, April 2, 1864.
Colonel Edward M. McCook, 2d Indiana Volunteers.
Colonel Hiram Burnham, 6th Maine.
Colonel Lewis A. Grant, 5th Vermont.
Colonel Edward Hatch, 2d Iowa.

TO BE BREVET BRIGADIER-GENERAL UNITED STATES ARMY.

Colonel Sylvanus Thayer.

ADJUTANT-GENERAL'S DEPARTMENT.

TO BE ASSISTANT ADJUTANTS-GENERAL, WITH THE RANK OF CAPTAIN.

First Lieutenant William R. Driver, of the 19th Massachusetts Volunteers.
First Lieutenant Charles Dodd, of the 1st New Jersey Cavalry.
First Lieutenant James A. Sayles, of the 5th Vermont Volunteers.
First Lieutenant A. E. Dana, of the 8th Illinois Cavalry.
Captain George Monteith, of the 4th Michigan Volunteers.
Captain Frank H. Cowdray, of the 95th New York Volunteers.
Captain John D. Fisk, of the 121st New York Volunteers.
Captain James W. Latta, of the 119th Pennsylvania Volunteers.
Captain Charles H. Miller, of the 16th Pennsylvania Cavalry.
Captain George W. Burton, commissary of subsistence of volunteers, to be assistant adjutant-general with rank of major, in the volunteer force.
Captain Septimus Carncross, assistant adjutant-general of volunteers, to be assistant adjutant-general, with rank of major.
Captain Burr H. Polk, assistant adjutant-general of volunteers, to be assistant adjutant-general, with rank of major.
Lieutenant Henry M. Cist, of the 74th Ohio Volunteers, to be assistant adjutant-general, with the rank of captain.
First Lieutenant Robert G. Curtis, of the 1st Regiment Mississippi Colored Volunteers, to be assistant adjutant-general, with the rank of captain.

SUBSISTENCE DEPARTMENT.

TO BE COMMISSARIES OF SUBSISTENCE, WITH THE RANK OF CAPTAIN.

William W. Wiltbank, of Pennsylvania, April 22, 1863.
George D. Newton, of Pennsylvania, June 29, 1863.
John P. Langdon, of Pennsylvania, June 30, 1863.
William C. Conrad, of Pennsylvania, June 30, 1863.
John P. Alden, of Kansas, June 2, 1863.
David G. Peabody, of Kansas, July 30, 1863.
D. M. Alexander, of Kansas, July 30, 1863.
David H. Veech, of Pennsylvania, November 16, 1863.
Francis A. Dohrman, of Pennsylvania, November 20, 1863.
R. E. Mayo, of Delaware.
Lieutenant John L. Rober, of the 11th Pennsylvania Cavalry.
Thomas C. Smith, of Michigan.
Captain Benjamin Saylor, of the 119th Pennsylvania Volunteers.
Captain J. B. Giebner, of the 140th Pennsylvania Volunteers.
James A. Cook, of New Hampshire, July 2, 1863.
Dewitt C. Tomlinson, of New York, August 10, 1863.
E. V. Brookfield, of Ohio.
Aaron M. Wilcox, of the 27th Iowa Volunteers.

Philo P. Judson, of the 8th Illinois Cavalry.
Edward Dale, of Wisconsin.
Charles H. Davis, of Massachusetts.
Waldemar Cursh, of Maryland.
Levi N. Smith, of Massachusetts.
John H. Alley, of Massachusetts.
Quartermaster-Sergeant William C. Thomas, of the 38th Massachusetts Volunteers.
Jacob Cholwell, of New York.
William S. Dodge, of Maine.
Lieutenant Garret Schenk, of the 11th New Jersey Volunteers.
Sergeant H. H. Davidson, of the 1st Connecticut Heavy Artillery.
First Lieutenant Noah P. Ives, of the 8th Connecticut Volunteers.
Lieutenant Benjamin F. Weeks, of the 28th Massachusetts Volunteers.
Daniel K. Hall, of Indiana.
Addison Stockton, of Pennsylvania.
William M. Jones, of Indiana.
Lieutenant George W. Chandler, of the 3d Michigan Volunteers.
John Van Lear, of Maryland.
Captain Edward F. Wyman, of the 6th Maine Volunteers.

TO BE INSPECTOR-GENERAL.

Captain Elisha H. Ludington, of the 17th U. S. Infantry, to be assistant inspector-general, with the rank of major, in the Army of the United States, *vice* Buford, deceased.

TO BE MEDICAL INSPECTOR.

John Wilson, to be medical inspector in the Army of the United States, with the rank of lieutenant-colonel, August 10, 1863, *vice* Barnes.

CORPS OF ENGINEERS.

TO BE FIRST LIEUTENANTS JUNE 11, 1863, TO FILL ORIGINAL VACANCIES.

Cadets John R. Meigs, Peter S. Michie, James D. Rabb, Wm. J. Twining, Wm. R. King, Wm. H. H. Benyaurd, Charles W. Howell, Asa H. Holgate.

TO BE QUARTERMASTERS.

Captain John C. McFerran, to be quartermaster, with the rank of major, in the Army of the United States, July 17, 1863.

Leander A. Poore, of Massachusetts, to be an assistant quartermaster, with the rank of captain, in the volunteer force,

Edwin J. Farnum, of Illinois, to be an assistant quartermaster, with the rank of captain, in the volunteer force.

Lieutenant Campbell Hay, Jr., of the 66th Indiana Volunteers, to be quartermaster.

PAY DEPARTMENT.

TO BE ADDITIONAL PAYMASTERS IN THE VOLUNTEER FORCE.

John S. Klein, of West Virginia.
Samuel Grisson, of Michigan.
E. J. Jennings, of Ohio.
Berry S. Young, of Kentucky.
George W. De Costa, of Kansas.
William R. Snyder, of Minnesota.
James F. Tureman, of Kentucky.
Henry Almstedt and Frederic Kelly, of Missouri.
John M. Muscott and John O. Mott, of New York.
Major R. W. McClaughry, of the 118th Illinois Volunteers.
George M. McConnell and Charles C. Brown, of Illinois.
Charles Case, of Indiana.
Samuel W. Pomroy, of Pennsylvania.

Major Nathan W. Brown, paymaster United States Army, to be deputy paymaster-general, with the rank of lieutenant-colonel, April 4, 1864, *vice* Ringgold, deceased.

Additional Paymaster Joseph H. Eaton, United States Volunteers, to be paymaster, with the rank of major, *vice* Brown, promoted.

AIDES-DE-CAMP UNDER THE ACT APPROVED JULY 17, 1862.

First Lieutenant Washington A. Roebling, of the 6th Independent New York Battery, to be aide-de-camp, with the rank of major, for Major-General Warren.

Sergeant Emmor B. Cope, Co. H, 1st Pennsylvania Reserve Volunteers, to be aide-de-camp, with the rank of captain, for Major-General Warren.

First Lieutenant Samuel W. Taylor, of the 36th Pennsylvania Volunteers, to be aide-de-camp, with the rank of captain.

Captain James R. Ross, of the 11th Indiana Volunteers, to be aide-de-camp, with the rank of major.

MEDICAL DEPARTMENT.

TO BE ASSISTANT SURGEONS.

Samuel B. Ward, of New York.
J. Sykes Ely, of Ohio.
Herman Lowenthal, of Maryland.
N. M. Glatfelter, of Pennsylvania.

Personal Items.

Major-General Dana is on a tour through the Western States, for the purpose of pushing forward furloughed men and the new recruits.

Major-General Sykes has been assigned by General Curtis to duty at headquarters, Department of Kansas.

Major-General Crittenden has been ordered to report to Major-General Burnside, now with the Army of the Potomac.

Major-General Blair has been appointed to the command of the 17th Army Corps.

Major-General Slocum is assigned to duty in command of the District of Vicksburg.

Brigadier-General Wild is relieved of his command at Norfolk, Va.

Brigadier-General Graham assumes command at Norfolk.

Brigadier-General Marston has reported to Major-General William F. Smith.

Brigadier-General Sturgis is equipping a large cavalry force at Memphis, Tenn.

Brigadier-General Ransom is recovering from the wounds he received at Pleasant Hill, La.

Brigadier-Generals Seymour and Shaler were captured by the rebels during the battles of "The Wilderness."

Colonel Gibson, of the 2d Ohio, succeeds Colonel Bruce as Military Governor at Louisville, Ky.

Colonel Fry, Provost-Marshal General, has been nominated brigadier-general.

Lieutenant-Colonel De Costa, having been obliged to resign his position in the field, has been appointed paymaster in the army by the President.

Major C. S. Charlot, Assistant Adjutant-General of Volunteers, on the staff of Major-General Curtis, has been assigned to duty as Assistant Adjutant-General of the Department of Kansas.

Major H. R. Selden, 13th U. S. Infantry, has leave of absence till further orders, to command a regiment of New Mexico Volunteers.

Captain James W. Forsythe, of the 18th Regulars, is made Assistant Inspector-General of the Cavalry Corps in the Army of the Potomac.

Regular Navy.

Commissions Issued.

April 26.—Charles Green, to be Captain on the Retired List from the 16th July, 1862. Asaph Hall, to be Professor of Mathematics from the 2d May, 1863; and William Harkness, to be Professor of Mathematics from the 24th August, 1863.

April 27.—William R. Bridgman, A. H. McCormick, Henry L. Johnson, Albert S. Barker, M. W. Sanders, Charles S. Cotton, Charles F. Blake, John R. Bartlett, O. A. Batcheller, John H. Read, Merrill Miller, F. J. Naile, Frederick Pearson, Edwin N. Kellogg, Silas W. Terry, Hayden T. French, La Rue P. Adams, John J. Read, Walter Abbot, Henry B. Rumsey, David D. Wemple, George M. Brown, George W. Wood, Charles W. Tracy, G. K. Haswell, Charles D. Jones, and M. L. Johnson, to be Lieutenants from the 21st April, 1864. Caspar Schenck, to be Paymaster from the 6th January, 1864.

April 28.—E. B. Bingham, E. M. Carson, H. A. Danker, J. H. Newcomer, Frederick Krecker, John S. Ramsay, W. F. Cottrell, and W. P. Baird, to be Assistant Surgeons. Thomas F. Craven, to be Commodore from the 16th July, 1862. William Radford, to be Commodore from the 24th April, 1863. Edward Middleton, to be Captain from the 24th April, 1863. Gustavus H. Scott, to be Captain from the 4th November, 1863. David McDougall, to be Captain from the 2d March, 1864. Job Corbin, to be Surgeon from the 9th March, 1864.

April 29.—W. W. Williams, to be Paymaster from the 2d March, 1864.

April 28.—Commodore H. K. Thatcher, ordered to temporary command of the New Hampshire. Commodore W. M. Glendy, ordered to command the Naval Station, Pensacola, *vice* Commodore William Smith, detached and ordered to command the Lancaster. Commodore Joseph Lanman, detached from the command of the Lancaster, and ordered home.

April 11.—Captain I. P. Gillis, detached (sick) from the command of the Ossipee.

April 20.—Captain S. F. Hazard, ordered to command the Rendezvous at Portsmouth.

April 23.—Captain W. R. Taylor, detached from special duty, and waiting orders.

April 28.—Captain E. Peck, detached from the command of the Naval Rendezvous, Portsmouth, N. H.

April 30.—Captain O. S. Glisson, detached from the command of the Mohican.

April 13.—Commander A. K. Hughes, detached from the command of the Cimarron, and ordered North.

April 14.—Commander A. Bryson, detached (sick) from the South Atlantic Squadron.

April 18.—Commander R. T. Renshaw, detached from the command of the Louisiana, and ordered North.

April 25.—Commander J. H. Strong, detached from the Pensacola. Commander R. W. Meade, detached from the command of the North Carolina, and ordered to command the Rendezvous 346 Water Street, New York. Commander E. R. Thomson, detached from the command of the Rendezvous 346 Water Street, New York, and ordered to command the North Carolina.

April 28.—Commander Daniel Ammen, ordered to report to Rear-Admiral Gregory at New York.

April 13.—Lieutenant-Commander James Stilwell, detached from special duty at New York, and ordered to the command of the Unadilla. Lieutenant-Commander George Bacon, detached from the command of the Unadilla, and

ordered North. Lieutenant-Commander J. H. Russell, detached from Ordnance duty, and granted one month's leave.

April 15.—Lieutenant-Commander J. Young, detached from Ordnance duty at New York, and ordered to command the Cimarron.

April 18.—Lieutenant-Commander T. S. Fillebrown, detached from the command of the Chenango.

April 20.—Lieutenant-Commander Henry Wilson, ordered to command the Cayuga, to relieve Lieutenant-Commander W. H. Dana. Lieutenant-Commander H. A. Adams, detached from Ordnance duty at Philadelphia, and ordered to command the Sciota, to relieve Lieutenant-Commander George H. Perkins. Lieutenant-Commander G. A. Bigelow, detached from the command of the Calhoun.

April 22.—Lieutenant-Commander T. S. Fillebrown, ordered to command of the Passaic, to relieve Lieutenant-Commander E. Simpson.

April 23.—Lieutenant-Commander H. A. Adams's orders to command the Sciota revoked, and ordered to the North Atlantic Squadron. Lieutenant-Commander J. E. De Haven, ordered to command the Tallapoosa.

April 26.—Lieutenant-Commander F. M. Bunce, detached from the South Atlantic Squadron, and ordered home.

April 28.—Lieutenant-Commander R. R. Wallace, detached from the Shenandoah, and ordered to the Fort Jackson. Lieutenant-Commander G. Cilley, detached from the Fort Jackson, and ordered to the New Hampshire.

April 18.—Lieutenant C. M. Schoonmaker, ordered to the Manhattan.

April 19.—Lieutenant N. H. Farquhar, detached from the Rhode Island.

April 20.—Lieutenant M. S. Stuyvesant, ordered to the Minnesota.

April 25.—Lieutenants F. V. McNair and G. W. Sumner, detached from the Pensacola.

April 30.—Lieutenant R. K. Duer, detached from the Mohican.

April 19.—Acting Ensign D. R. Cassell, detached from the Rhode Island.

April 20.—Ensign G. M. Brown, detached (sick) from the West Gulf Squadron.

April 22.—Ensign G. K. Haswell, detached (sick) from the West Gulf Squadron.

April 25.—Acting Ensign D. R. Cassell, ordered to the Brooklyn.

April 28.—Ensign Henry C. Taylor, detached from the Shenandoah, and ordered to the Iroquois.

April 13.—Assistant Surgeon H. D. Burlingham, detached from the North Carolina, and ordered to the Rendezvous, Cincinnati.

April 15.—Assistant Surgeon George R. Brush, ordered to the North Carolina.

April 19.—Assistant Surgeon D. M. Skinner, detached from the West Gulf Squadron. Surgeon J. A. Lockwood, detached from duty as Fleet-Surgeon of the Pacific Squadron. Assistant Surgeon S. G. Webber, detached from the Rhode Island.

April 23.—Surgeon R. C. Dean, ordered to special duty at Baltimore.

April 25.—Surgeon Philip Lansdale, detached from the Pensacola. Assistant Surgeon W. H. Jones, detached from the Pensacola.

April 26.—Assistant Surgeon John H. Clark, detached from the Naval Hospital, New Orleans, and ordered home. Assistant Surgeon C. H. Giberson, detached from the West Gulf Squadron, and ordered home. Assistant Surgeon I. W. Bragg, detached from the Katahdin, and ordered to the Naval Hospital, New Orleans. Assistant Surgeon Henry W. Birkey, detached from the Aroostook, and ordered as relief of Assistant Surgeon Giberson.

April 29.—Surgeon R. C. Dean, detached from special duty at Baltimore.

April 30.—Surgeon E. F. Corson, detached from the Mohican. Assistant Surgeon E. Kershner, detached from the Passaic from the 14th March.

April 19.—Paymaster R. H. Douglas, detached from the Rhode Island.

April 20.—Assistant Paymaster C. S. Perley, detached from the Maratanza, and ordered North.

April 22.—Paymaster George L. Davis, ordered to the Receiving-Ship at Cairo, Illinois. Paymaster R. Parks, detached from special duty at New York, and ordered to the San Jacinto.

April 30.—Assistant Paymaster James Hoy, Jr., detached from the Mohican, and ordered to settle accounts.

April 14.—First Assistant Engineer William H. King, detached from the Massasoit, and ordered to the Augusta.

April 25.—First Assistant Engineer Henry W. Fitch, detached from the Pensacola.

April 27.—First Assistant Engineer B. C. Bampton, detached from the navy-yard, New York, and ordered to the Nyack. First Assistant Engineer Henry Snyder, detached from the Eutaw, and ordered to the navy-yard, New York.

April 14.—Second Assistant Engineer James H. Perry, detached from special duty at Baltimore, and ordered to the Saranac, to relieve Second Assistant Engineer E. Olson. Second Assistant Engineer E. Laws, ordered to the Iosco.

April 21.—Second Assistant Engineer G. D. Emmons, detached from the Catskill, and ordered North.

April 25.—Second Assistant Engineers C. M. Burchard, A. H. Able, and A. Colin, detached from the Pensacola.

April 30.—Second Assistant Engineer J. H. Morrison, ordered to report to Rear-Admiral Gregory.

April 20.—Third Assistant Engineer W. D. McIlvaine, detached from the Oneida, and ordered to return. Third Assistant Engineer John Van Hovenburg, detached from the Rhode Island, and ordered to the Juniata.

April 25.—Third Assistant Engineers T. W. Fitch, F. C. Burchard, and G. W. Baird, detached from the Pensacola.

April 26.—Third Assistant Engineer C. A. Evans, detached from the South Atlantic Squadron.

April 11.—Sailmaker Madison Wheeler, ordered to the Naval Station, Pensacola.

April 13.—Gunner William Cope, ordered to the New Ironsides, to relieve Gunner Charles Stewart.

April 15.—Gunner R. H. Cross, ordered to the Minnesota, to relieve Gunner Charles W. Homer, ordered to the Naval Magazine, Norfolk.

April 21.—Carpenter William D. Jenkins, ordered to the navy-yard, New York.

April 25.—Gunner D. A. Rowe and Carpenter J. E. Cox, detached from the Pensacola.

April 28.—Gunner Thomas R. Wilson, detached from the Vanderbilt, and ordered to the Niagara. Gunner Eugene Mack, detached from the Niagara, and wait orders.

April 30.—Boatswain George C. Abbott and Gunner James Hutchinson, detached from the Mohican.

Resignations Accepted.

April 11.—Midshipman Henry T. Dunn.
April 21.—Third Assistant Engineer F. W. Nyman.
April 25.—Second Assistant Engineer A. K. Fulton.
April 28.—Assistant Surgeon Walter B. Dick.

Volunteer Navy.

April 14.—Acting Volunteer Lieutenant W. D. Routh, ordered to command the Midnight, to relieve Acting Master W. H. Garfield.

April 15.—Acting Volunteer Lieutenant F. S. Hill, detached from Mississippi Squadron, and ordered to navy-yard, Philadelphia.

April 16.—Acting Volunteer Lieutenant Thomas P. Ives, ordered to report to the Bureau of Ordnance.

April 18.—Acting Volunteer Lieutenant Henry Eaton, ordered to command the Louisiana.

April 23.—Acting Volunteer Lieutenant T. F. Wade, ordered to command the Commodore Jones.

April 27.—Acting Volunteer Lieutenant H. C. Keene, ordered to command the Naval Battery, Seavey's Island.

April 29.—Acting Volunteer Lieutenant R. P. Swann, ordered to command the Potomska.

April 30.—Acting Volunteer Lieutenant W. F. Shankland, detached from the Seavey's Island Battery, and ordered to command the Chickasaw.

April 12.—Acting Master D. P. Heath, ordered to command the Hope, to relieve Acting Master John E. Rockwell.

April 14.—Acting Master W. H. Wood, detached from the Union, and wait orders.

April 18.—Acting Master William McGloin, detached from the Chenango, and ordered to the Gettysburg.

April 19.—Acting Master J. H. Gleason, detached from the Daylight, and ordered to the Governor Buckingham. Acting Master William Williams, detached from the Rhode Island, and wait orders. Acting Master William Bates, ordered to the Alabama.

April 21.—Acting Master F. T. King, ordered to command the Horace Beales. Acting Master J. H. Gleason, detached from the Governor Buckingham, and ordered to the Massasoit. Acting Master H. W. Grinnell, detached from the Monongahela (sick).

April 23.—Acting Master W. H. Wood, ordered to the Niagara. Acting Master James Ogilvie, ordered to the Tallapoosa.

April 25.—Acting Masters C. W. Pratt, E. Hoyt, and G. Richmond, detached from the Pensacola.

April 26.—Acting Master G. E. Hill, detached from the Potomac Flotilla, and ordered to the Vicksburg. Acting Master L. G. Cook, ordered to the Potomac Flotilla.

April 27.—Acting Master R. Burke, detached from the South Atlantic Squadron, and ordered to the navy-yard, New York.

April 28.—Acting Master Alexander McIntosh, detached from the Rendezvous, New York, and ordered to the New Hampshire. Acting Master C. E. Hawkins, detached from the navy-yard, Portsmouth, and ordered to the New Hampshire.

April 29.—Acting Master E. S. Keyser, ordered to the Governor Buckingham.

April 30.—Acting Master W. H. De Wolf, detached from the Chippewa, and ordered North. Acting Master R. B. Ely, detached from the Mohican.

Appointed Acting Ensigns, and ordered to the School-Ship Savannah.

April 11.—John C. Harrington.
April 12.—A. D. Henderson and William B. Marchant.
April 13.—Peter Pease.
April 20.—R. B. Brown.
April 23.—Luther W. Smith.
April 26.—Frank P. Center.
April 28.—Jas. H. Church, T. Nickerson, and O. C. Snow.

April 29.—George Chamberlain and Thomas S. Arey.
April 30.—F. D. Jacobson.

Appointed Acting Ensigns.

April 11.—Cecil C. Neill, U. S. S. Sonoma; James B. Russell, U. S. S. Camelia.
April 12.—D. B. Corey, U. S. S. Racer.
April 14.—George H. Marks, Potomac Flotilla.
April 16.—W. H. Higinbotham, West Gulf Squadron.
April 20.—A. O. Child, U. S. S. Gettysburg.
April 21.—W. G. Perry, U. S. S. Alabama; A. F. West, U. S. S. Pontoosuck.
April 23.—W. L. Pavy, and ordered to the Michigan.
April 26.—Joshua Simmons, Potomac Flotilla.
April 27.—Thos. F. Laycock, U. S. S. De Soto; and A. J. L. Barker, U. S. S. Chippewa.
April 28.—Thomas G. Hale, U. S. S. Ticonderoga.
April 29.—H. L. R. Woods, Potomac Flotilla.
April 30.—William Clark, U. S. S. Poppy.

April 12.—Acting Ensign Chas. Millett, detached from the Newbern, and ordered to the East Gulf Squadron.

April 13.—Acting Ensign D. W. Andrews, detached from the Ino, and ordered to the R. R. Cuyler. Acting Ensign D. J. Grant, detached from the Tuscarora, and ordered to the Ino. Acting Ensign F. H. Crandell, detached from the South Atlantic Squadron, and waiting orders.

April 14.—Acting Ensign Jno. D. Barclay, detached from the Massachusetts, and ordered to the South Atlantic Squadron.

April 18.—Acting Ensign A. S. Leighton, detached from the Chenango, and ordered to the Gettysburg. Acting Ensigns G. B. Mott, J. A. Crossman, and F. G. Adams, detached from the Chenango, and ordered to the Manhattan.

April 19.—Acting Ensigns D. R. Brown and Albert Taylor, detached from the Rhode Island, and ordered to the Alabama. Acting Ensign W. H. Penfield, detached from the Daylight, and ordered to the Governor Buckingham.

April 21.—Acting Ensign Henry Kloeppel, ordered to the Horace Beales.

April 23.—Acting Ensign Henry Taylor, detached from the Massasoit, and ordered to the Relief. Acting Ensign A. J. Louch, detached from the Michigan, and ordered to the Gettysburg. Acting Ensign F. H. Crandell, ordered to the Tallapoosa.

April 25.—Acting Ensign Wm. Betts, detached (sick) from the Mackinaw. Acting Ensign D. R. Brown, detached from the Alabama, and ordered to the Fort Donelson. Acting Ensign Eugene Biondi, detached from the Pensacola. Acting Ensign W. H. Penfield, detached from the Governor Buckingham, and ordered to the Mackinaw. Acting Ensign C. C. Gill, detached from the Wamsutta, and ordered to the Bermuda.

April 26.—Acting Ensign R. Hepburn, ordered to the Savannah.

April 29.—Acting Ensign D. R. Brown, detached from the Fort Donelson, and ordered to the Circassian.

April 30.—Acting Ensigns George T. Ford, A. D. Campbell, and A. T. Holmes, detached from the Mohican.

Appointed Acting Master's Mates.

April 12.—William Ellison, U. S. S. Sciota; William Swartwout, U. S. S. Pensacola; William McCann, U. S. S. Pensacola; William Campbell, U. S. S. Conemaugh; Robert Wood, U. S. S. Arthur.

April 16.—Alex. Stinson, U. S. S. Aroostook.

April 18.—William Jones, U. S. S. Monongahela; Henry Kent, U. S. S. Monongahela; George H. Pillings, U. S. S. Ossipee; A. A. Clark, U. S. S. Corypheus.

April 20.—Albert C. Smith, Potomac Flotilla.

April 21.—Thos. F. Roberts, Potomac Flotilla; B. F. Fries, U. S. S. Supply; William J. Lowe, U. S. S. C. Williams; John White, U. S. S. Seneca; John Mason and L. B. Delun, U. S. S. Mount Washington; Morris Wagg, U. S. S. Gemsbok; Chas. H. Smith, U. S. S. Pontoosuck; John Jones, U. S. S. Pontoosuck.

April 22.—R. B. Palfrey and S. H. Burrows, Naval Battery, Seavey's Island.
April 23.—G. V. Demorest, U. S. S. Vicksburg; William Cromack, U. S. S. Roanoke; Fred. Read, Potomac Flotilla.
April 25.—Thos. Topliff, U. S. S. Alert.
April 27.—E. W. Walton, U. S. S. Honeysuckle; James Smith, U. S. S. Larkspur.
April 30.—J. E. M. Graham, U. S. S. Circassian.

Appointed Acting Master's Mates, and ordered to the School-Ship Savannah.

April 11.—R. T. Ryder, G. W. Merchant, and C. A. Blanchard.
April 12.—H. P. Fish.
April 14.—E. A. Gould and L. F. Lee.
April 18.—Chas. D. Moore and John R. Lee, Stephen A. Abbott.
April 21.—Henry Tew and Peter Clary.
April 23.—L. A. Kent and E. S. McDonald.
April 28.—J. Canady, J. A. Belcher, and S. T. Smith.
April 30.—Thos. H. Soule, Jr., F. F. Gregory, and C. C. Johnson.

April 11.—Acting Master's Mate J. A. Thomas, detached from the Wamsutta, and ordered to the Mackinaw.
April 12.—Acting Master's Mate S. E. Willitts, detached from the Sunflower, and ordered North.
April 14.—Acting Master's Mate Thos. P. Jones, ordered to the Pontoosuck. Acting Master's Mate Thos. W. Rack, detached from the Florida, and ordered to the Hunchback. Acting Master's Mate N. S. Pultz, detached from the Florida, and ordered to the Victoria.
April 15.—Acting Master's Mate A. M. Lyon, detached from the Lancaster, and ordered to return to the United States.
April 18.—Acting Master's Mates D. B. McKenzie, F. R. Jasche, and G. H. Goodmanson, detached from the Chenango. Acting Master's Mate W. K. Knowlton, detached from the Florida, and ordered to the Victoria.
April 19.—Acting Master's Mates C. S. Wilcox and C. F. Ellmore, detached from the Rhode Island, and ordered to the Alabama.
April 21.—Acting Master's Mate Thos. P. Jones, detached from the Pontoosuck, and ordered to the Agawam. Acting Master's Mate Jno. L. Robins, detached from the Brandywine, and ordered to the North Atlantic Squadron.
April 22.—Acting Master's Mate J. H. McClune, detached (sick) from the Dai Ching. Acting Master's Mate Jno. G. Brown, detached from the Jonquil.
April 23.—Acting Master's Mate George H. White, detached from the Gem of the Seas, and ordered home. Acting Master's Mate G. R. Bakeman, ordered to the Gem of the Seas.
April 25.—Acting Master's Mates J. P. Knowles, W. H. Sprague, and W. W. Black, detached from the Pensacola.
April 29.—Acting Master's Mate Henry Wyman, ordered to the Philippi.
April 30.—Acting Master's Mates W. F. Veltman, J. S. Reynolds, and E. N. Snow, detached from the Mohican.

Appointed Acting Assistant Surgeons.

April 19.—John H. Richards and George C. Reynolds, ordered to the North Carolina; and George A. Parker, ordered to the Ohio.
April 20.—Robert W. Clark, and ordered to the Princeton.
April 29.—H. N. Beaumont, and to wait orders; H. R. Watts, and ordered to the navy-yard, Washington.
April 30.—George L. Simpson, and ordered to the North Carolina.

April 11.—Acting Assistant Surgeon I. Stevens, ordered to the Mackinaw.
April 12.—Acting Assistant Surgeon W. P. Baird, ordered to the Passaic. Acting Assistant Surgeons J. F. Cottrell and J. S. Ramsey, ordered to the navy-yard, Philadelphia.
April 13.—Acting Assistant Surgeon J. W. Newcomb, ordered to the navy-yard, Washington.
April 15.—Acting Assistant Surgeon C. D. White, ordered to the Nereus.

April 19.—Acting Assistant Surgeon W. H. Kinney, detached from the Princeton, and ordered to the West Gulf Squadron. Acting Assistant Surgeons J. G. Bell, G. D. Buckner, and W. B. Hartman, detached from the Princeton, and ordered to the Mississippi Squadron. Acting Assistant Surgeons W. R. Semans and H. S. De Ford, detached from the North Carolina, and ordered to the Mississippi Squadron. Acting Assistant Surgeon T. F. Leech, detached from the Ohio, and ordered to the Mississippi Squadron.

April 20.—Acting Assistant Surgeon F. M. Dearborn, detached from the Daylight.

April 23.—Acting Assistant Surgeon P. H. Purcell, detached from the Southfield.

April 26.—Acting Assistant Surgeon J. H. Richards, detached from the North Carolina, and ordered to the Aroostook. Acting Assistant Surgeon D. McLean, detached from the Ohio, and ordered to the Katahdin. Acting Assistant Surgeon I. C. Whitehead, ordered to the Quaker City.

April 27.—Acting Assistant Surgeon J. W. Langley, detached from the Pampero.

April 28.—Acting Assistant Surgeon C. D. White, detached from the Nereus, and ordered to the R. R. Cuyler.

April 30.—Acting Assistant Surgeon W. H. Campbell, detached from the Commodore McDonough, and ordered North; Acting Assistant Surgeon R. W. Clark, detached from the Princeton, and ordered to the Commodore Morris.

Appointed Acting Assistant Paymasters.

April 14.—F. Bissell, F. H. Arms, and F. W. Hanson.
April 15.—C. W. Bull.
April 16.—Henry C. Machette.
April 18.—Elias H. Johnson.
April 19.—Edwin Webster and Thomas B. Reed.
April 22.—Homer E. Rand.

April 11.—Acting Assistant Paymaster W. T. Whittemore, ordered to the Mackinaw.

April 13.—Acting Assistant Paymaster E. D. Ilsley, detached from the Conestoga.

April 18.—Acting Assistant Paymaster Bailey Hascall, detached from the Chenango.

April 19.—Acting Assistant Paymaster J. H. Mulford, ordered to the Manhattan.

April 20.—Acting Assistant Paymaster Chas. Louks, ordered to the Wamsutta, to relieve Acting Assistant Paymaster E. K. Gibson; Acting Assistant Paymaster C. H. Noyes, ordered to the Maratanza.

April 21.—Acting Assistant Paymaster Daniel Bosworth, ordered to New York, for instruction; F. H. Arms, ordered to Bu. Provisions.

April 22.—Acting Assistant Paymaster A. C. Winter, detached from the San Jacinto, and ordered home.

April 25.—Acting Assistant Paymaster J. H. Stevenson, detached from the Pensacola.

April 29.—Acting Assistant Paymaster F. Bissell and H. C. Machette, ordered to the Mississippi Squadron; and H. G. Thayer and C. W. Bull, ordered to New York, for instruction; D. Bosworth, ordered to the Horace Beales; and A. N. Blakeman, ordered to the Tallapoosa.

April 30.—Acting Assistant Paymaster H. E. Rand, ordered to the Potomska; and L. L. Brigham, to the New Hampshire; and R. H. Gillotte, ordered to the Gettysburg.

Appointed Acting First Assistant Engineers.

April 18.—William Morris, West Gulf Squadron.
April 29.—John Miller, U. S. S. Gettysburg.

April 12.—Acting First Assistant Engineer D. L. King, detached from the Tullahoma, and ordered to the R. R. Cuyler.

April 14.—Acting First Assistant Engineer M. P. Cheevers, detached from the Augusta, and ordered to the Massasoit.

April 21.—Acting First Assistant Engineer S. C. Midlam, ordered to the Manhattan.

April 28.—Acting First Assistant Engineer William H. Best, detached from the Daylight, and ordered to the Iroquois, *vice* Acting First Assistant Engineer.

Appointed Acting Second Assistant Engineers.

April 12.—James Williams, U. S. S. R. R. Cuyler.
April 13.—A. T. Rockefeller, U. S. S. General Putnam.
April 14.—Joseph C. Lewis, U. S. S. Rhode Island
April 18.—Charles H. Slack, West Gulf Squadron.
April 19.—G. Lewis, U. S. S. Alabama; James Allen, U. S. S. Montgomery.
April 22.—William Gumphert, U. S. S. Atlanta.
April 23.—T. L. Churchill, U. S. S. Niphon.
April 26.—Henry D. Hodges, U. S. S. Gettysburg.

April 14.—Acting Second Assistant Engineer Samuel H. Magee, detached from the Fuchsia, and ordered to the R. R. Cuyler. Acting Second Assistant Engineer J. C. Mockabee, ordered to the Fuchsia. Acting Second Assistant Engineer C. A. Stuart, detached (sick) from the Montauk.

April 16.—Acting Second Assistant Engineer Charles Wines, detached from the Maumee, and ordered to the Heliotrope.

April 18.—Acting Second Assistant Engineer P. O. Brightman, detached from the Daylight, and ordered to the Bienville.

April 19.—Acting Second Assistant Engineer J. L. Lewis, detached from the Rhode Island, and ordered to the Alabama; H. B. Greene, detached from the Iuka, and ordered to the Tecumseh.

April 20.—Acting Second Assistant Engineer John G. Roseman, ordered to the Alabama. Acting Second Assistant Engineer William H. Miller, ordered to the Manhattan.

April 26.—Acting Second Assistant Engineer E. C. Malloy, ordered to the Gettysburg.

April 29.—Acting Second Assistant Engineer William Lannon, detached from the Victoria, and ordered to the Governor Buckingham.

April 30.—Acting Second Assistant Engineers C. R. Weaver and John Lardner, detached from the Mohican.

Appointed Acting Third Assistant Engineers.

April 12.—Isaac H. Fuhr, D. Gilliland, John Minces, and T. T. Risbell.
April 13.—George Caldwell, U. S. S. Princess Royal.
April 14.—Abram Geer, U. S. S. Tritonia, George W. Young, U. S. S. R. R. Cuyler; J. Lenihan, U. S. S. Newbern; William C. Remick and E. Cahill, U. S. S. Heliotrope.
April 16.—M. Berry, U. S. S. Narcissus; and E. McMahon, U. S. S. Cactus.
April 18.—James Essler, Henry Lyons, Jr., Edward Torallas, and Daniel J. O'Keef, U. S. S. Bienville; and John R. Davison, U. S. S. Narcissus.
April 19.—L. R. Burgoyne, E. T. Henry, A. Van Cleve, Albert Mayer, H. W. Whiting, G. W. Burt, Charles F. Stroud, A. C. Wilcox, R. S. Lynth, and Thomas McEllwell, ordered to the West Gulf Squadron; Henry W. Smith, U. S. S. Tecumseh; John H. Dee, U. S. S. Manhattan.
April 20.—C. H. Warren, U. S. S. Alabama.
April 21.—John H. Sleaman, U. S. S. Gettysburg; James B. Johnson and Henry Hardy, U. S. S. Tallapoosa.
April 22.—Robert G. Lewis, U. S. S. Water-Witch.
April 23.—George Barnard, U. S. S. Santiago de Cuba.
April 26.—Charles Malloy, U. S. S. Gettysburg; John S. Hays, U. S. S. Manhattan; H. G. Beatley, U. S. S. Alabama.
April 28.—Samuel James, U. S. S. Maumee.

April 12.—Acting Third Assistant Engineer R. T. Ewing, detached from the Proteus, and ordered to the West Gulf Squadron.

April 18.—Acting Third Assistant Engineer John Doyle, ordered to the Circassian.

April 20.—Acting Third Assistant Engineer James D. Van Zandt, detached from the Admiral, and ordered to the Oneida.

April 23.—Acting Third Assistant Engineer William B. Emmons, detached (sick) from the Bermuda.

April 25.—Acting Third Assistant Engineer W. J. Hughes, detached from the Pensacola; and Acting Third Assistant Engineer J. B. Farrand, detached from the Southfield.

April 28.—Acting Third Assistant Engineer J. E. Hilliard, detached from the Daylight, and ordered to the Eutaw.

April 29.—Acting Third Assistant Engineer E. B. Carter, detached from the Tullahoma, and ordered to the Gettysburg.

April 30.—Acting Third Assistant Engineer D. Harrington, detached from the Southfield. Acting Third Assistant Engineer J. W. Buck, detached from the Mohican.

April 22.—James Nash, appointed Acting Gunner, U. S. S. Pontoosuck.

April 23.—Peter Meehan, appointed Acting Gunner, U. S. S. Tallapoosa.

April 25.—Acting Gunner H. Peters, detached from the Chenango, and ordered to the Patuxet.

Promoted for Good Conduct, &c.

April 12.—Acting Master William Hamilton, to Acting Volunteer Lieutenant; Acting Masters James M. Williams, C. B. Wilder, and Thomas Edwards, promoted to Acting Volunteer Lieutenants.

April 13.—Acting Masters R. P. Swann, Robert Tarr, and George D. Upham, promoted to Acting Volunteer Lieutenants.

April 16.—Acting Ensign I. S. Gelatt, promoted to Acting Master.

April 20.—Acting Master Nicholas Kirby, promoted to Acting Volunteer Lieutenant, and ordered to the West Gulf Squadron. Acting Master William F. Shankland, promoted to Acting Volunteer Lieutenant.

April 22.—Acting Ensign W. O. Putnam, promoted to Acting Master.

April 26.—Acting Ensign L. S. Fickett, commanding U. S. S. Glide. Acting Ensign William Harcout, U. S. S. Arizona, promoted to Acting Master.

April 28.—Acting Ensign G. Cottrell, promoted to Acting Master.

April 29.—Acting Ensign H. G. McKennee, U. S. S. Ladona; and Acting Ensign James T. Ross, U. S. S. Passaic.

Resignations Accepted.

April 14.—Acting Second Assistant Engineer Charles A. Norris.

April 18.—Acting Third Assistant Engineers William Hiffren and E. J. Gillespie.

April 21.—Acting Masters George W. Domett and W. H. Polleys.

April 23.—Acting Masters J. O. Barclay and Jonas S. Higbee.

April 11.—Acting Master's Mate E. W. Fiske.

April 12.—Acting Master's Mate William Mann.

April 13.—Acting Master's Mate R. W. Robins.

April 14.—Acting Master's Mate Thomas C. Barton.

April 16.—Acting Master's Mate A. M. Lyon.

April 19.—Acting Master's Mates E. L. Deane and Freeman Langley.

April 21.—Acting Master's Mate John H. Manning.

April 30.—Acting Master's Mate William Wilhelm.

April 26.—Acting Master J. H. Rogers; Acting Ensign O. Sundstrom; and Acting Third Assistant Engineer J. F. Sullivan.

April 27.—Acting Ensign H. H. Johnson; and Acting Third Assistant Engineer M. Boggons.

April 29.—Acting Assistant Surgeon J. J. Brownlee; and Acting Third Assistant Engineer G. W. Lawrence.

April 30.—Acting Ensign E. Rich, Jr.; and Acting First Assistant Engineer George W. Holloway; and Acting Assistant Surgeon Thomas Welsh.

Revoked.

April 18.—Acting Master George W. Browne.
April 22.—Acting Second Assistant Engineer T. D. Hulse.

April 21.—Acting Master's Mate Allen W. Snow.
April 25.—Acting Master's Mates John F. Bennett and Van Buren Blemm.

Dismissed.

April 14.—Acting Ensign Charles Stanley.
April 21.—Acting Ensign Joshua Simmons.

April 14.—Acting Master's Mate James Messett.
April 27.—Acting Ensign E. M. Seaver.
April 30.—Acting Third Assistant Engineers John Crawford and James Buckley.

April 23.—Acting Master's Mate Alden W. Tripp.

[General Order No. 32.]

NAVY DEPARTMENT, April 16, 1864.

The Secretary of the Navy hereby awards Medals of Honor to the following-named petty officers, seamen, &c., who have "distinguished themselves by gallantry in action and other seamanlike qualities," and have been recommended in accordance with the requirements of General Order No. 10, of April 3, 1863:—

James K. L. Duncan, ordinary seaman, U. S. S. Fort Hindman. During the engagement near Harrisonburg, La., March 2, 1864, a shell bursted at the muzzle of one of the guns of the vessel, setting fire to the tie of a cartridge which had just been put in the gun. Duncan immediately seized the burning cartridge, removed it from the gun, and threw it overboard.

Hugh Melloy, ordinary seaman, U. S. S. Fort Hindman. During the engagement near Harrisonburg, La., March 2, 1864, a shell pierced the bow casement on the right of gun No. 1, mortally wounding the first sponger, who dropped his sponge out of the port on the forecastle. Melloy instantly jumped from the port to the forecastle, recovered the sponge, and sponged and loaded the gun while outside, exposed to a heavy fire of musketry.

William P. Johnson, landsman, U. S. S. Fort Hindman, in the engagement near Harrisonburg, La., March 2, 1864. Although badly wounded in the hand, he took the place of a wounded man, and sponged and loaded the gun throughout the entire action.

Bartlett Laffey, U. S. S. Petrel; James Stoddard, U. S. S. Marmora; William J. Franks, U. S. S. Marmora. These men were sent on shore, with others, to man a rifle howitzer which had been mounted on a field-carriage and posted in the streets of Yazoo City, during the rebel attack on that place, March 5, 1864. Their defence of the gun against superior forces is mentioned as most gallant, having nobly stood their ground through the whole action, fighting hand to hand to save the gun and the reputation of the Navy. [Promoted to Acting Master's Mates, and entitled to "gratuity" under act of July 16, 1862.]

Richard Seward, paymaster's steward, U. S. S. Commodore, November , 1863. Volunteered to go on the field, amidst a heavy fire, to recover the bodies of two soldiers, which he brought off, with the aid of others,—a second instance of personal valor within a fortnight. [Promoted to Master's Mate, and entitled to "gratuity" under act of July 16, 1862.]

Christopher Nugent, orderly sergeant of marines, U. S. S. Fort Henry. Was in charge of a reconnoitring party sent into Crystal River, Fla., June 15, 1863, and displayed extraordinary zeal, skill, and discretion in driving a guard of rebel soldiers into a swamp, capturing their arms, and destroying their camp equipage.

James Brown, quartermaster, U. S. S. Albatross, in the action with Fort De Russey, May 4, 1863. After the steering wheel and wheel-ropes had been shot

away, he stood on the gun-platform of the quarterdeck, exposing his person to a close fire of musketry from the shore, and rendered invaluable assistance, by his expert management of the relieving tackles, in extricating the vessel from a perilous position.

William Moore, boatswain's mate, U. S. S. Benton. Conspicuous for bravery in the attack on Haines's Bluff, December 27, 1862, being engaged in carrying out lines to the shore amidst a heavy fire; also for marked coolness and ability as captain of a nine-inch gun in Battery Benton, in the attack on Vicksburg, May 22, 1863.

William P. Brownell, coxswain, U. S. S. Benton. Conspicuous for skill and courage, as captain of nine-inch gun, in the attacks on Grand Gulf, May 3, 1863, and Vicksburg, May 22, 1863; also in serving at Battery Benton, before Vicksburg.

John Jackson, ordinary seaman, U. S. S. C. P. Williams, Stono Inlet, August 16, 1863. Was stationed on the forecastle lookout, and discovering two torpedoes floating down so as to cross the bows of the vessel, seized a boat-hook, jumped on to the bob-stays, and carefully guided the torpedoes down with the tide. Subsequently he volunteered to remove the caps, which he did with skill and courage.

William Talbott, captain of forecastle, U. S. S. Louisville, capture of Arkansas Post, January 10 and 11, 1863. Was conspicuous for ability and bravery as captain of a nine-inch gun.

Richard Stout, landsman, U. S. S. Isaac Smith, Stono River, January 30, 1863. Distinguished for gallantry and meritorious conduct in the action with the rebel batteries, in which he lost his right arm.

George W. Leland, gunner's mate; Thomas Irving, coxswain, U. S. S. Lehigh, Charleston Harbor, November 16, 1863. Distinguished for promptness in manning and rowing an open boat engaged in carrying lines between the Lehigh and Nahant while the shot and shell from cannon and mortars were flying and breaking all around. [Promoted to Acting Master's Mates, and entitled to the "gratuity" under act of July 16, 1862.]

Horatio N. Young, seaman; William Williams, landsman; Frank S. Gile, landsman, U. S. S. Lehigh, Charleston Harbor, November 16, 1863. Gallant behavior in passing lines between the Lehigh and Nahant in an open boat, being at the time exposed to a heavy fire from the forts in Charleston Harbor. [Advanced in their ratings.]

Michael Huskey, fireman, U. S. S. Carondelet, Deer Creek Expedition, March, 1863. Gallantry in volunteering to aid in the rescue of the tug Ivy, under fire of the enemy, and for general meritorious conduct.

John Dorman, seaman, U. S. S. Carondelet. Although several times wounded, in various actions, has invariably returned to duty, presenting an example of constancy and devotion to the flag.

William Farley, boatswain's mate; Charles Moore, landsman; James Miller, quartermaster; Robert Blake, contraband, U. S. S. Marblehead, in the engagement with the rebel batteries on Stono River, December 25, 1863. William Farley, distinguished for extraordinary energy and heroism in discharging his duties as first captain of nine-inch gun, setting a noble example of courage and devotion; Charles Moore, although painfully wounded by a piece of shell and sent below, returned to his quarters in a few moments, and insisted upon resuming his duties, and actually remained until he became so faint from loss of blood that he had to be sent below; James Miller, noted for bravery and coolness in casting the lead and giving the soundings while exposed to a dangerous fire, and only retired, reluctantly, when ordered to do so, also commended for admirable management at the wheel; Robert Blake, serving as powder-boy, displayed extraordinary courage, alacrity, and intelligence in the discharge of his duties under trying circumstances, and merited the admiration of all.

Those to whom medals are awarded will apply for them through their commanding officers.

GIDEON WELLES,
Secretary of the Navy.